

The Mining Journal

RAILWAY AND COMMERCIAL GAZETTE:

FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

No. 1838.—VOL. XL.

LONDON, SATURDAY, NOVEMBER 12, 1870.

WITH FIVEPENCE.
(SUPPLEMENT) { PRICE PER ANNUM, BY POST, £1 4s.

MR. JAMES CROFTS, STOCK AND SHAREBROKER,
NO. 1, FINCH LANE, CORNHILL.
(ESTABLISHED 1842.)

holders of mining shares DIFFICULT OF SALE in the open market may find
purchasers for the same through Mr. CROFTS' agency. Also parties requiring
advice how to act in the disposal or abandonment of doubtful mining stocks may
profitably avail of Mr. CROFTS' long experience on the market in all cases of
doubt or difficulty, legal or otherwise.

ROCHE CONSOLS.

Mr. CROFTS strongly recommends the purchase of these shares. Most impor-
tant discoveries are being made, and the mine will undoubtedly become a great
mine. The mine is situated at the head of the celebrated Goss Moors, from
which millions worth of tin have been raised. The district has produced some of
the richest tin mines in Cornwall. The shares at present can be secured for 15s.
Mr. CROFTS SPECIALLY RECOMMENDS the purchase of GREAT ROYALTON and
ROCHE CONSOLS shares. Tin has further advanced this week, and there is a strong
demand for all good tin stock.

Bankers: Metropolitan Bank.

MR. W. H. BUMPUS, STOCK AND SHAREDEALER,
44, THREADNEEDLE STREET, LONDON, E.C., has FOR SALE the
following SHARES, free of commission:—
75 Anglo-Austral., 25s. 10 East Caradon, £2 1/2s.
paid, 6s. 3d. 5 East Lovell, £2 7/8s.
25 Sweetland Crk., £2 2s.
paid, 6s. 3d. 25 Condurrow, £2 1/4s.
50 Anglo-Brazilian, 5s. 6d. 10 Tankerville, £2 1/4s.
100 Frontino, 2s. 3d. 25 Frank Mills, 2s. 9d.
50 Australian Uni., 10s. 50 Gen. Brasilia, 14s.
20 Bronfryd, £2 1/2s. 50 Taquaril, 3s. prem.
15 Asheton, £2 1/2s. 50 Tan-yr-Alit, 29 1/4s.
15 Brich Consols, £3. 5 Great Laxey, £1 8s. 6d.
20 Bwadrain Cons., 2s. 40 Hington Down.
30 Chontales, 15s. 35 Lovell Consols.
30 Mark Valley, £6 13 6 5 Wt. Chiverton, £5 4s.
20 Chiv. Moor, £2 18 9 20 New Lovell, £2.
25 Goldbeck Fells, 2s. 9d. 30 W. Pant-y-Go, 21s.
20 Drake Walls, 2s. 6d. 50 New Trellawen, 7s. 6d.
20 Don Pedro, £2 1/2s. 25 West. Tanker., 22 1/2s. 3.
100 Prince Wales, 11s. 6d. 30 Wheal Mary Ann, £2.
25 Pen-Alit, 29s. 75 Yudanamutana, 20s.
30 Plynlimon, £2.

W. H. B. transacts business in every description of shares at the best market
prices, and free of commission.

Daily Price-List free on application.

Bankers: The Metropolitan Bank (Limited), Cornhill, E.C.

JHON RISLEY, (SWORN) STOCK AND
SHAREBROKER, 48, THREADNEEDLE STREET, LONDON, E.C.
Bankers: London and Westminster, Lothbury.

MR. Y. CHRISTIAN, STOCK AND SHAREDEALER,
11, ROYAL EXCHANGE, E.C.
Bankers: Bank of England.

MR. T. A. MUNDY, STOCK AND SHAREDEALER,
38, BISHOPSGATE STREET WITHIN, E.C.
Bankers: City Bank.

MR. WILLIAM SEWARD, STOCK AND MINING SHARE
BROKER, 19, THROGMORTON STREET, LONDON, E.C.
every description of shares BOUGHT and SOLD at the best market prices.

MR. THOMAS THOMPSON, JUN., STOCK AND
SHAREDEALER AND MINE AGENT, 5, WHITEHALL, S.W.
Bankers: National Provincial Bank of England.

FOR SALE, at prices affixed:—
Aberdaunant, 17s. East Bassett, £2 10s.
Anglo-Argentine, £15 5 East Lovell, £2 17s.
p. cent. preference, 25 East Seton, 14s.
18s. paid, 11s. 25 Frank Mills, £1 15s.
50 Asheton, £4 7s. 6d. 10 Gt. Royalton, £1 12s.
Bronfryd, £2 10s. 50 Gt. Wh. Lovell, £1 10s.
Bwadrain, 20s. 10 Great Vor, £5 5s. ed.
Brich Consols, £1 7s. 6d. 50 Holmbush and Kelly
Caegynon, £1 7s. 6d. Bray, 8s.
Cefn Brywno, £2 5s. 5 Llanharmon, £2.
Chiv. Moor, £2 16s. 10 North Croft, £1 13s 6.
Don Pedro, £2 14s. 10 Pacific, £2 7s. 6d.
Drake Walls, £2 2s. 50 Pen-Alit, £1 19s. 3d.
Doleath, £1 27s. 25 Rosewall Hill, £1 5s.
5 W. Mary Ann, £8 10s.

NDEAN AND CO., STOCK AND SHAREDEALERS,
BRITISH AND FOREIGN STOCK, SHARE, and MINING OFFICES,
85, GRACECHURCH STREET, LONDON, E.C.
Investors desirous of making money quickly should at once buy shares in the
TIN MINE. It is an extraordinary rich tin property. We have ex-
amined the property, and are convinced of its value. These shares should be
bought at once; we have 50 or any less portion for sale, and we believe they will
rise to a considerable price. A splendid improvement has just taken place;
new ledges cut in worth from £50 to £60 per fathom. The company is limited,
advise only limited liability companies, cautioning investors to avoid the
Book System as they would a serpent.
We also strongly recommend the GEIFRON, in £5 shares (limited), 30s. paid,
splendid improvement has taken place in the ABERDAUNANT LEAD MINE,
the sales of lead will now take place; and the mine is likely to take a prominent
position amongst its neighbours. These shares should be bought at once.
NDAN and Co., 85, Gracechurch Street, London.

R. W. TREGEELLAS, 122, BISHOPSGATE STREET
WITHIN, LONDON, E.C. (Established 16 years), has FOR SALE the
following SHARES at net prices:—
Aberdaunant, 17s. 6d. 1 Devon Consols, £10s.
Asheton, £4 1/2s. 1 Dolcoath, £130.
Australian Uni., 9s. 6d. 50 Pestarena, 12s.
Anglo-Argent., 16s. 5 Eberhardt, £3 1/2s.
Bronfryd, £2 1/2s. 5 East Lovell, £2 1/2s.
Brynpontig, 20s. 50 Frontino, £s. 9d.
Bwadrain Consols. 20 Frank Mills, 3s. 6d.
Car Cambrone, 21s. 50 Gen. Brasil., 15s. 9d.
Chiv. Moor, £2 16s. 3d. 10 Great Vor, £5 5s.
Cook's Kitchen, £2 20s. 20 Gt. Wh. Lovell, £2 26s.
Cefn Consols. 10 Gorseid and Celyn
Level, £3 1/2s. 20 Great Trevrack.
Cardigan Bay, £2 1/2s. 10 Gwydir Park, 9s. 3d.
Chiverton Val., £2 18 9 40 Great Retallack.
Caegynon. 5 Llanharmon, £2 1/2s.
Don Pedro, £2 19 6 p.m. 20 Lovell Cons., 6s. 6d.
Ding Dong, £2 20 1/2s. 20 New Lovell, 29s. 6d.
Drake Walls, 2s. 6d. 5 Nanglles, 20s.
20 Pen-Alit, 27s. 9d.

HYDHALOG.—This mine has been inspected by Captain James Roach, a copy
of whose report will be furnished upon application.

GEORGE BUDGE, STOCK AND SHAREDEALER,
No. 4, ROYAL EXCHANGE BUILDINGS, LONDON, E.C. (Established
21 years), is a SELLER at net prices of:—
Terras, 30s.; 10 East Pool, £10; 10 East Lovell, 27s.; 50 East Chiverton, 18s.;
Trevrack; 30 Plynlimon, £2 2s.; 50 Marka Valley, £6 1/2s.; 50 Prince of
Wales, 11s.; 20 Asheton, £4 1/2s.; 30 Tan-yr-Alit; 50 Caldbeck Fells, 20s. 6d.; 100
Great Vor, £5 5s.; 30 Bwadrain Consols.; 50 Nanglles, 20s. Rose and
Trevrack; 20 Brich Consols.; 100 West Eggar Lie, 30s.; 50 Hammnett; 45 Drake
Valley, 21s.; 10 Wheal Buller; 25 Van Consols.; 100 Cremer Wheal Abraham;
East Bottle Hill, 14s. 6d.; 35 Great Rock; 10 Llanharmon; 50 West Godolphin;
Taquaril, 3s. prem.; 200 Almada and Tirito, 22s. 3d.; 125 Rossa Grande, 6s.
Frontino and Bolivia, 6s. 6d.; 20 Eberhardt, 3 1/2 prem.; 50 West Jewell.

TANKERVILLE, WEST TANKERVILLE,
AND WELSH LEAD MINES.

EAST WHEAL LOVELL, AND OTHER CORNISH MINES.
PETER WATSON'S "WEEKLY MINING CIRCULAR AND SHARE LIST
—SYNOPSIS OF CORNISH AND DEVON MINES," &c., of Friday, Nov. 11,
No. 608, price 6d., each copy, forwarded on application, contains information on
the following mines:—

Tankerville, Minera. Rosewall Hill and Ran-
West Tankerville, East Lovell. som United.
Van. East Seton. New Lovell.
Great Rock. West Caradon. Mine Dividends in October, and Particulars of the Metal Market, &c.

MR. PETER WATSON, STOCK AND SHAREDEALER,
75, OLD BROAD STREET, LONDON, E.C.
Bankers: The Alliance Bank, and Union Bank of London.

THE WAR, AND PRICE OF STOCKS AND SHARES.—
Read the "LONDON DAILY RECORD—STOCK AND SHARE LIST," as
to what to buy at once for investment.

The "London Daily Record" is published by P. WATSON, Stock and Share
Dealer, 79, Old Broad-street, E.C., every evening, and forwarded by post to sub-
scribers. Annual subscription, £1 1s.; by post, £2 2s.

MR. E. D. W. A. R. D. C. O. O. K. E.,
STOCK AND MINING SHAREDEALER, 76, OLD BROAD STREET
LONDON, E.C.
Bankers: Alliance Bank.

MR. W. H. C. U. E. L. L.,
No. 42, CORNHILL, LONDON, E.C.
Daily price-list on application.

MR. C. A. POWELL, BRITISH AND FOREIGN STOCK AND
SHAREDEALER, No. 1, PINNER'S COURT, OLD BROAD STREET,
LONDON, E.C.
Every description of negotiable security dealt in at current market prices.
BUYER of North Tresekerry and Prince of Wales.
SPECIAL BUSINESS in Tankerville, Frontino, Taquaril, Gwydyr Park,
Great Royalton, Pacific, and Sweetland.

Price List on application.
Bankers: City Bank, Finch-lane, E.C.

MR. J. B. HAWKS, STOCK AND SHAREDEALER,
3, CROWN COURT, THREADNEEDLE STREET, E.C., has FOR SALE
the following SHARES:—

20 Tan-yr-Alit, 42s. 9d. 5 Mary Ann, £9. 100 Mining Assoc., 5s. 3d.
50 United Mexican, £2 1/2s. 1 W. Seton, £3 3/4s. 5 Marke Valley, £6 13 9
5 Great Laxey, £1 1/2s. 20 West Agar, 37s. 9d. 20 North Croft, 35s. 3d.
1 W. Chiverton, £2 1/2s. 30 West Maria, 33s. 9d. 20 Penrhyn, £2.
20 Penrhyn, 40s. 5 Kitty (Lelant), £1 1/2s. 50 So. Gt. Work, 5s. 6d.
1 Van, £5. 20 East Caradon, £2 1/2s. 30 Trevrack.

MR. THOMAS ROSEWARNE, SHAREDEALER,
81, OLD BROAD STREET, LONDON, E.C.
WANTED TO BUY, the following SHARES:—

Bedford United, 20s. East Lovell, £27. Tankerville, £14.
Chiverton Moor, £2 1/2s. Hington Down, 11s 6. Treburt.
Devon Consols, £100. Okel Tor. Vron.
Perran W. Virgin, 35s.

BEFORE I called attention to this mine for several weeks past, when the shares were 20s. to 30s.; they are now £2 1/2s. to £3 1/2s., and will go to £5. Of course, the newly-discovered tin lode is the main point of interest, and parties wishing to be satisfied as to the richness thereof may see specimens of the ore brought away by myself, also some pure tin extracted from part of the same stone, giving 3 cwt. 3 qrs. 2 lbs. 6 ozs. of tin to the ton of stuff. I have also specimens of copper which will produce 25 per cent. My advice is to send good agents to inspect, and immediately act upon their reports.

PERRAN WHEAL VIRGIN.—I call special attention to this mine, which I have also inspected. Specimens of the stuff raised may be seen at my office. These shares will also see a high figure.

WEST JEWELL shares should also be bought.
Money advanced to any extent upon good marketable mining shares.
Bankers: Bank of England. Office hours Ten to Four.

Twenty-six Years' Experience.

MR. F. W. MANSSELL, STOCK AND SHAREDEALER,
1, PINNER'S COURT, OLD BROAD STREET, LONDON, E.C., having
been connected with the Mining Market for the above period, and constantly
visiting the mines of Cornwall and Wales, is at all times in a position to give
reliable advice in the purchase and sale of shares.

Daily List of closing prices in British and Foreign mines published every even-
ing, and forwarded to correspondents (free).
Reference exchanged. Bankers: London Joint-Stock Bank.

SILK AND CO., STOCK AND SHARE BROKERS,
CHIEF OFFICE: 32, REGENT STREET, W.
CITY OFFICE: 16, MARK LANE, E.C.

Every description of Stocks and Shares dealt in at the closest market value
for cash only.

CWMBOL, MORBEN, CROWN.—Shares in the above slate quarries are recom-
mended as safe and profitable investments. FRANK LIMMER, Secretary.

MR. HENRY MANSSELL, STOCK AND SHAREDEALER,
1, PINNER'S COURT, OLD BROAD STREET, LONDON, has the
following SHARES FOR SALE, for cash or account, free of commission:—

10 Tankerville, £14 8s 9d. 50 Aberdaunant. 35 So. Condurrow, £3 3 9
30 Pestarena, 11s. 3d. 100 W. Prince of Wales, 5s. 50 Cefn Consols.
50 Drake Walls, 21s. 9d. 3d. 3 Van, £5 1/2s. 70 Terras Tin, 30s.
25 Bwadrain Cons., £2 17s 6 1 Dolcoath, £134. 40 Florence and Tonkin,
20 S. Herodotus, off. w. 20 West Maria, £1 12s 6d. 5s. 9d.
100 Prince of Wales, 11s. 6d. 10 East Pool, £9 17s. ed. 50 Holmbush and Kelly
70 E. Providence, off. w. 50 North Tresekerry, 4s. Bray, offer wanted.
5 Great Laxey, £1 17s 6 10 Tamar Valley, 80 W. Pant-y-Go.
75 Excelsior, 5s. 80 Harewood Cons., 5s. 15 East Lovell, £27 13 9d.
wanted. 20 E. Caradon, £4 17s 6d. 20 Van Cons., £1 19s. 6d.
30 Nantose Consols, 10s. 50 East Seton, 14s. 6d.
75 Taquaril, 3s. 3d. pm.

Mr. HENRY MANSSELL recommends for a safe and speedy rise in price
Taquaril, West Jewell, Great Vor, Van Consols, and Terras shares.

TERRAS TIN MINING COMPANY (Limited).—Another sale of tin will be made
from the mine this day. Recent inspections have more than endorsed previous
reports, good discoveries having just been advised. These are, without doubt,
the cheapest shares now being offered, as results soon will show.

Bankers: London Joint-Stock Bank.

MESSRS. J. HUME AND CO., STOCK AND SHARE
BROKERS, 74, OLD BROAD STREET, LONDON, E.C.
Our Friday's List of Closing Prices:—

Devon Consols, £100, £110; Drake Walls, 20s., 22s. 6d.; East Caradon, £4 1/2s., £5;
East Lovell, £27, £28; Great Laxey, £18, £18 1/2s.; Great Vor, £5, £5 1/2s.; New
Lovel, £1 1/2s., £2; Prince of Wales, 11s., 13s.; South Condurrow, £3, £3 1/2s.;
Tincoff, £44 1/2s., £47 1/2s.; Van Consols, £17 1/2s., £21; West Chiverton, £53, £54;
2 1/2s., £3; Taquaril, 3s., 37s. 6d.; Wheal Mary Ann, £8, £10; Uny,
2 1/2s., £3; Taquaril, 3s., 37s. 6d. prem.; Eberhardt, £13 1/2s., £14 1/2s.

A daily Price List sent on application.

Orders by post or telegram promptly executed.

The "Investment Record and Mining Review" for November will be ready
next week. Shares recommended in our October issue have advanced 30 per cent.
Bankers: The London Joint-Stock Bank.

WANTED, FOR CASH:—5 Margaret, 10 East Pool, 10 Uny,
50 South Condurrow, 3 West Frances, 2 Dolcoath, and 3 Providence,

FOR SALE, at net prices each:—5 Buller, £4 1/2s.; 5 East Bassett, £2; 25 East

Frances, 6s. 6d.; 10 North Levant, £10 1/2s.; 20 Pacific, 27s. 6d.; 50 Taquaril;
and 100 General Brazilian.

OFFERS WANTED for 10 Cardigan Bay Consols and 100 South Plynlimon
(15s. paid).

Address, BISHOP and Co., 32, Nicholas-lane, Lombard-street, London, E.C.

THE CITY EXCHANGE MINING AND INVESTMENT
OFFICES, 32, NEW BROAD STREET, E.C.

ALFRED FISHER, MANAGER.

We strongly advise your purchasing shares in the TERRAS TIN, at 30s. each.

We have only a few remaining at the price. A splendid opportunity occurs for
purchasing, and making money in the ABERDAUNANT shares. A great im-
provement has taken place in the mine. The GEIFRON shares should also be
bought at par (30s. paid); also TANKERVILLE and TAQUARIL shares.

[Nov. 12, 1870.]

The Champion Silver-Lead and Copper MINING COMPANY (LIMITED).

Registered the 13th November, 1869, under the Companies Acts, 1862 and 1867.

CAPITAL £24,000, IN 2400 SHARES OF £10 EACH.

£1 to be paid on application, and £1 on allotment. Calls not to exceed £1 per share. Three months to intervene between the days appointed for payment of calls.

DIRECTORS.

Sir ROBERT BRISCO, Bart., Crofton Hall, Wigton.

WILLIAM BANKS, Esq., Highmoor House, Wigton.

Lieut-Colonel BRISCO, Junior United Service Club, Charles-street, London.

WILLIAM COWAN, Esq., LL.D., Linburn House, Midcalder, N.B.

ROBERT TIFFEN, Esq., M.D., Wigton.

JOSEPH SEALBY, Esq., Carlisle.

BANKERS—THE CARLISLE CITY AND DISTRICT BANKING COMPANY.

SOLICITORS—Messrs. S. and S. G. SAUL, Carlisle.

SECRETARY—JAMES LAINTON.

OFFICES, -7, POST OFFICE COURT, CARLISLE.

PROSPECTUS.

This company is formed for the purpose of working an extensive property in the Stewartry of Kirkcudbright, in the South of Scotland. The property comprises many square miles of ground, and is secured from the several landowners on leases of 21 years, at a royalty of 1-15th, with the exception of one smallset, which is held at 1-12th.

It has been worked for nearly two years under tack-notes by a few gentlemen privately, who, after proving the existence of large mineral veins in all directions through the different sets, recently purchased the Creetown, Lachantyre, and Dallash Mines, with the machinery, buildings, &c., belonging thereto, with the intention of forming the whole into one company, and inviting the co-operation of those of their friends who are interested in mining, which is now done with the greatest confidence, the value of the property being beyond doubt.

The capital expended in the purchase of the mines and machinery, and working cost up to this date, has been provided for by the issue of 1200 paid-up shares to the present proprietors, who will also subscribe for a portion of the 120 additional shares proposed to be issued for the further development of the property.

The report of Mr. John Taylor, Jun., of Queen-street-place, London, dated 4th May, 1869, is annexed. It will be observed that his inspection of the property took place prior to the purchase of the Creetown, Lachantyre, and Dallash Mines.

The report of Capt. Remfrey, one of Messrs. John Taylor and Sons' agents, is also appended, and particular attention is directed to his remarks regarding the extent of the property, the machinery erected, the work already done, with the discoveries made, and character and value of the ore.

The Portpatrick Railway passes through the centre of the property, and the parts of Creetown and Gatehouse are within easy distance.

A copy of the Memorandum or Articles of Association is annexed.

Copies of the Memorandum and Articles of Association may be obtained at the office of the company, and application for shares may be made on the form enclosed with the prospectus, and accompanied by a deposit of £1 per share.

REPORTS.

Sandycroft, Chester, May 4.— I beg to hand you my report upon your mining property in Scotland, which I visited last week. The sett, which is a very extensive one, being nearly 5 miles in length and 3½ in width, is situated close to the town of Creetown, in Kirkcudbrightshire, bounded to the west by the Old Cairnsmore Mines, and to the south-east by the Creetown Mine. A number of fine masterly lodes are to be seen at the surface at different points, and several of these can be traced for hundreds of fathoms in length through the sett. These lodes are of two different kinds, some running to the north of west and east and south of east, but at different angles; and others running to the east of north and west of south. Nearly all the lodes at present discovered are marked and numbered upon the Ordnance Map shown to me by Capt. Hawke; those running north of west and south of east being coloured blue, and the caunter lodes red. About £600 has been expended in trials of a superficial nature at various points on the property. These trials, as far as they have been carried, are very satisfactory, and give considerable promise of future successes. Referring to the lodes marked blue on the map, Nos. 1, 2, and 3 can be traced for a long distance on the summit of Culronchrie Hill, running parallel to one another at a distance of 5 to 10 fms. apart. At the foot of the hill in Culronchrie burn they are very plainly to be seen, and here an opening has been made and a level driven about 6 fms. south-east upon the middle or No. 2 vein. In the forebreast of this level the lode is from 4½ to 5 ft. wide, with the walls very clearly defined, underlying about 2 ft. in a fathom to the north-east; and although still so near the surface (the ground rising very gradually above) has already changed in character, and has a very kindly appearance, being composed of quartz with spots of lead ore, and in one portion traces of yellow copper ore. The No. 1 lode is, however, the most promising of these lodes (1, 2, and 3) as seen at the surface, being some 10 ft. wide; but for several reasons it will be advisable to drive upon the No. 2 lode (say) for a distance of 15 or 20 fms., and then put out cross-cuts to the No. 1 and No. 3 lodes. Within a few fathoms of these lodes to the westward, close together in the burn, may be seen the outcrop of the No. 4 lode about 6 feet wide, the No. 5 lode 4 ft. wide, and the No. 6 lode 10 ft. wide. Upon these no trial has been made, as they will be intersected at a considerable depth by the cross-cut driven on the course of the No. 2 caunter lode, to be mentioned hereafter. A short distance from the burn, near this spot, is the outcrop of the No. 7, or spring-water lode, some 50 ft. wide, open and kindly-looking, and from which are bubbling numbers of small springs of water strongly impregnated with oxide of iron. Still further westward a few fathoms we come to the No. 8 lode. Upon this a level has been driven south-east from the burn 5 fms.; the lode is from 4 to 5 ft. wide, very promising looking, and in the forebreast of the level already producing small stones of lead ore. An improvement may be expected very soon at this point. This No. 8 at its outcrop in the burn—where first discovered—is composed of quartz, interspersed throughout with small spots of copper. Close to the mouth of the level it is thrown some 3 fms. to the south-east by a cross-course running at right angles to it. From 70 to 80 fms. to the west of the level, upon No. 8 lode, a cross-cut is in course of driving in a northerly direction towards the No. 2 caunter lode; when this is reached it is proposed to carry forward the cross-cut upon the course of this north-east and south-west lode, and thus intersect all the eight lodes above mentioned, and any others that may not have been discovered at the surface. A considerable distance to the south-west of this cross cut down the burn openings have been made upon the No. 2 caunterlode, with the object of commencing another level; this should be a very fine trial level, intersecting as it would all the parallel lodes to the north-east of this point at 26 fms. under the cross-cut mentioned above, and unwatering them to a depth of no less than 105 fms. below the summit of Culronchrie Hill, upon which the outcrop of many of the lodes may be seen. The No. 10, or Creetown main, lode has not as yet been seen in your sett, but is at a short distance from the boundary to the south-east. It has been opened up lately in three or four places, with great success, by the Creetown Mining Company. At the point nearest your boundary at which it has been touched a level has been driven little more than 4 fms. into the hill side, and in the forebreast is to be seen a fine lode, 6 ft. wide, of a very promising nature, with a course of lead ore going down in the bottom of the level worth from 1½ to 2 tons to a fathom. The Creetown Mine has been worked for some 10 or 12 years, and some thousands of pounds worth of lead and copper ores raised. Lodes No. 11 and No. 12, as laid down upon the plan, represent the supposed direction through the sett of the Black Craig and Old Cairnsmore lodes. Nothing has been done as yet actually to prove that these lodes do traverse your property, but there is every reason to believe that such is the case, and pits have been sunk near the plantations to the south-east of Cairnsmore House upon their supposed course, and in each pit although the lodes were not yet seen the indications lead me to think that they are at no great distance. The depth of soil is considerable, and for other reasons these trials have been abandoned for the present. The Blackraig lode is a very large one, being some 40 ft. wide, and large quantities of ore have been raised at this mine during the many years it has been worked; and a fine discovery has only lately been made in the bottom of the old mine, thus proving the important fact that the lodes in this district are productive at a considerable depth from the surface. At the Cairnsmore Mine, also, the returns of ore were some 60 tons per month, and a fine course of ore was worked in the 110 fm. level; the lode is about 12 ft. wide. The No. 13 lode is to be seen in a cutting upon the railway close to Culronchrie Bridge. It is a wide, open-looking vein, but at this point much disordered. A small lode, No. 14, parallel to this, was discovered under the bridge in the Burn. We now come to No. 15 lode, the only one upon which a shaft has been sunk in this large sett. The depth at present attained is only 16 ft. from the surface, and the lode here is 5 to 6 ft. wide, composed principally of quartz, and carrying a rib of rich lead ore, nearly solid, from 3½ to 4 in. wide, and some 2 ft. of the lode besides, full of strong spots of ore, worth in one end of the shaft fully 15 cwt. of ore per fathom. The shaft is sunk within 25 fms. of the boundary, and close to the burn, so that it would not be advisable to continue it down as permanent work; but for a trial, with the great promise of improvement that it now presents, it is very important that an effort should be made to sink the shaft, at all events, a few fathoms deeper. This lode, as seen in the burn, a few fathoms to the south-east of the shaft, is 13 or 14 ft. wide, but it is here much disordered, and is not, in my opinion, so promising in appearance as several of the other lodes as seen at the surface. The lode has been proved at two points to the south-east side of the burn, and therefore out of your sett. An effort has also been made to find the lode some hundreds of fathoms to the north-west of the shaft, but the great depth of soil and the influx of surface water rendered this a matter of considerable difficulty during the winter, and the trial was, therefore, abandoned; should, however, the No. 15 lode open out well in the shaft it would certainly be advisable to continue this. The Nos. 16 and 17 lodes have been opened up to a small extent in the adjoining sett to the south-east of your property; so far as they are at present seen both lodes are much disordered, but are fine strong veins, and spotted throughout with mundic, copper, and lead ore. No. 18 lode is also large and promising looking, as seen in the burn; it is from 20 to 30 ft. wide, composed mainly of quartz, interspersed with mundic and small spots of copper. To the south-west of this lode about 60 fms. a level has been driven nearly 20 fms. in a north-easterly direction from the burn, to intersect the No. 18 and parallel lodes. This level will prove all this portion of the sett in a most thorough manner; and, from the number of lodes and strings to be seen in the burn, there is every reason to hope it may lead to valuable discoveries. A very large lode indeed is to be seen in the side of the burn, about ½ mile from Creetown. A winze has been sunk about 4 fms. upon it, and although this winze was full of water, I could see from the appearance of the staff broken there that the lode is a very kindly one, and well worthy of further

exploration. Of the lodes marked red on the map, the only one that I saw that appears to be promising is the No. 6; it is 10 to 12 ft. wide, as seen in the side of the hill in the granite, and interspersed throughout with spots of yellow copper ore. Having, I believe, mentioned all the points of note on the property, I will conclude by saying that I consider it to present great promise of success, and with vigorous working at certain points I shall be very much surprised if in the course of a very few months discoveries of value are not made.

I would remark that the points I think most important are the driving on the No. 2 lode; this will be an excellent trial of the lodes Nos. 1, 2, and 3. The cross-cut to the No. 2 caunter lode, to intersect so many of the lodes at right angles; also the cross-cut from the burn below the high road, towards the No. 18 and parallel lodes; and last, but no least, the shaft on the No. 15 lode. I should recommend you by all means to endeavour to get this shaft down, at all events, a few fathoms, to prove the lode, as it appeared to me that the rib of lead ore was becoming stronger as it went down, and was of more value quite in the bottom of the shaft than it was 2 ft. above that point. These trials it would be well to carry on during the next few months with some vigour, as such operations near the surface can be much more advantageously worked during the summer months than in winter.

JOHN TAYLOR, Jun.

Derwent Mines, Riding Mill, Northumberland, June 30, 1870.— Acting upon Mr. John Taylor's instructions, I carefully examined your extensive mineral property, situated near Creetown, Kirkcudbright. The veins are large and numerous, traversing the trap formation and portions of argillaceous schist, which is more or less associated with the veins.—Champion Mine: The deep adit level, cross-cut, driving north towards No. 18 vein, was taken up at the Chain-burn, and driven upon a cross vein about 32 fathoms, which had influenced the main vein—so much so, that a part of the vein can be traced on the east side of the level for 2 or 3 fathoms back from the present end, which consists of quartz, spar, spots of mundic, blonde, and lead ore, of no market value; a few fathoms will very probably intersect the principal part of the vein. There are eighteen known veins to the north of this level within 2½ miles. The out-crop of this vein where seen crossing the burn is very wide, composed principally of quartz, spar, mundic, &c. The level continued would drain the above veins and high backs. No. 17 vein is also large, containing strong branches of quartz and spar. The most encouraging part is that about 3 feet wide, containing small specimens of nickel, having on the south wall greenstone, and clay-slate partially decomposed on the north.—No. 15: The bearing of this vein is about the same direction as Nos. 18 and 17, being 33° south of east and north of west. The engine-shaft is sunk across-cut, driving north towards No. 18 vein, was taken up at the Chain-burn, and driven upon a cross vein about 32 fathoms, which had influenced the main vein—so much so, that a part of the vein can be traced on the east side of the level for 2 or 3 fathoms back from the present end, which consists of quartz, spar, spots of mundic, blonde, and lead ore, of no market value; a few fathoms will very probably intersect the principal part of the vein. There are eighteen known veins to the north of this level within 2½ miles. The out-crop of this vein where seen crossing the burn is very wide, composed principally of quartz, spar, mundic, &c. The level continued would drain the above veins and high backs.

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intersection; and this in all probability would throw open payable or tributary ground. In the 14 fm. level, No. 2 vein was reached 20 fathoms east of shaft, and a winze sunk to the 30 fm. level. The distance driven upon the vein No. 2 is 7 fathoms south and 14 fathoms north; 3 fathoms back from north end the vein was very productive for about 3 fathoms long in the roof, which has been taken away. This level (18) has been driven west about 26 fathoms. About 21 fathoms from shaft a north and south vein has been intersected, showing spots of lead ore. This end stands 35 fathoms short of cutting the old Pibble vein, from which the former company raised nearly all their ore. This is an important point, and should at once be carried out. Flat-Rod Shaft: This shaft is sunk 25 fathoms from surface, or 26 fathoms below adit level

Meetings of Mining Companies.

THE PENALT SILVER-LEAD MINING COMPANY.

The half-yearly meeting of shareholders will be held on Tuesday, Nov. 29, in the dressing-house, at the mine. The object of holding the meeting at the mine is to afford the shareholders an opportunity of seeing the progress that has been made with the works, and of estimating for themselves the prospects of the undertaking. At this meeting the accounts of the expenditure of the half-year will be produced, and the means thereby offered of comparing the work done for the cost incurred. We have no doubt that all who go into the matter will be satisfied with the results; they will find the mine to be at once richly productive, and in prime working order. The adits and levels continue to yield ore of the estimated value of \$10,000 per fathom. The inclines and paths by which the ore is conveyed to the head of the great incline, to be thence sent to the crushers and dressers, are laid out upon plans judiciously adapted to the configuration of the ground, so as to save unnecessary labour; and the great incline itself is working satisfactorily. Two wagons, conveying 4 tons of ore, can be sent down it at the rate of six miles an hour continuously. The stone-breaker is working most efficiently. It is calculated to break 100 tons per diem. The crushers beneath, the sieves, and the appliances for moving the crushed material to the dressing-house at the next lower level, are working well. The machinery for finally dressing the ore is the patent German dressing machinery, the great merit of which is that it turns out the lead in a high state of purity, prevents all waste, and being in a great measure self-acting the cost of the labour is very moderate. Motion is given to the machinery by a water-wheel of smaller dimensions than that by which the crusher is moved, but still powerful enough to turn an additional number of machines, for the erection of which at a future time ample provision is made.

Since the machinery was erected it has been found necessary to make some trifling re-adjustments and changes, in order to adapt it to the quality of the ore, and to secure easy working. These changes and re-adjustments have been made by the contractor to the satisfaction of the agent, Capt. Gianville. It may, therefore, be stated that the mine is now in operation making lead, and though its powers cannot be said to be in full vigour at present, results will speedily be obtained of a gratifying character. The early workings of mining machinery on a large scale cannot safely be forced beyond a certain point, and in this case the object aimed at is regularity and constancy of production, in preference to intermittent, or temporary results, greater at one period than another. In other words, the policy of the board is to return good, steady, and permanent dividends. Everything at the mine, such as the quantity and quality of the ore produced, and the efficiency of the machinery, promises such results. In full operation the Penalt Mine will realise the anticipations of the shareholders; and situate as it is in a romantic pass, and close to the margin of the beautiful Nantlle lakes, it will prove greatly attractive to tourists in the summer who may be exploring the mineral resources of North Wales.

GREAT WEST CHIVERTON MINING COMPANY.

A general meeting of shareholders was held on Tuesday, at the offices of the company, Dowgate-hill.

Mr. HARRY BROWN, Chairman of the company, in the chair.

After the usual preliminaries, it was explained by one of the shareholders, a practical and scientific miner of long experience, who recently visited the mine, instructed by the board of directors, that the trial engine is incapable of keeping the mine unwatered during the coming winter, and that without sinking below the present depth—24 fms. under adit—the monthly cost attending the working of the engine is far in excess of what it ought to be in proportion to the number of men employed underground; that, therefore, this disproportioned outlay was stopped, and stope taken, by coextending and extending the adit level on No. 2 lode, to ascertain the most desirable spot where to sink a permanent shaft, and to erect an engine of sufficient power to do justice to the highly favourable appearance of the mine, where laid open by the recent operations. Specimens broken by him in the 12 fm. level, on No. 1 lode, were exhibited, and his assurance given that there the lode was, by accurate measurement, fully 25 inches wide, and solid, composed of manganic, tridymite, quartz, plumb, flocks, and a percentage of lead ore, which would make it worth the cost of raising, if dressing-machinery were at hand. Taking into consideration all the positive evidences of a prosperous and lasting mine, requiring only spirited working, and that a small share in a mine with sufficient capital is much better than a large one in an undertaking cramped for want of ample funds to properly develop it, the vendors of the mine have offered to reduce the purchase-consideration of 20,000/-, in paid-up shares, originally charged by the promoters, under the leadership of the late Mr. S. H. Armitage, the then managing London director, to 50,000/- worth of paid-up shares, with a view to place the difference of 15,000/-, worth of shares at the disposal of the company, so as to relieve it of a burden to this extent, and to raise a fully sufficient capital to develop the mine, and procure the necessary pumping and dressing machinery. The directors, appreciating this offer, resolved to call immediately a special meeting of the shareholders, in order to make sundry desirable and important alterations in the Articles of Association of the company, and for taking preliminary steps for ensuring to the public the balance of their share-capital. An extraordinary general meeting will, therefore, be held on the 24th inst., the objects of which are set forth in the advertisement inserted in another column.

NEW WHEAL LOVELL MINING COMPANY.

A special meeting of shareholders (convened by requisition) was held at the London Tavern, on Thursday, for the purpose of appointing a purser, committee, bankers, and any other officers who may be deemed necessary, and for passing such resolutions as required.

Mr. C. J. HILL (of London) was voted to the chair.

The CHAIRMAN explained the object of the meeting, as indicated in the notice.

A question having arisen as to the legality of the meeting,

Mr. HALLETT urged its legality on the ground of its having been convened by requisition.

Mr. PETER WATSON explained that the committee, of which he was a member, ceased at the last meeting, after having tided over a very troublesome matter. During the investigation which was rendered necessary, Mr. Field, of Marazion, was called upon to investigate the accounts, but, at the meeting held on the mine, Mr. Cross, with whom an arrangement had been entered into, had been appointed to perform the duties of purser.

Mr. R. DAVEY said that Mr. Cross was appointed temporarily; therefore, was not appointed purser.

Mr. PETER WATSON said that it was a deliberate insult to the committee: to appoint a man to take charge of the financial affairs of the company who had made a compromise in connection with certain financial derangements, which they had accepted. He did not think such a step was compatible with the true interests of the company.

Mr. CADE said that Mr. Cross was acting as clerk and purser with the consent of all parties.—Mr. PETER WATSON: But not with the consent of the gentlemen who formed the committee.—Mr. DAVEY explained that he should not have taken the chair at the last meeting had it not been urged upon him. What he now complained of was that his name was attached to the printed minutes embracing resolutions which were not put to the meeting—for instance, it was stated that the accounts were presented and passed, but the motion was not put to the meeting. The resolutions were not legally passed.

Mr. PETER WATSON said that if that were the case all that was done at that meeting fell to the ground.

Mr. CAREEK said the meeting was adjourned for the passing of the accounts.

Mr. LITTLE said the meeting was adjourned for the production of the cost-book. He did not hear any shareholder object to the accounts in any way, but as the cost-book was not produced the minutes could not be entered. There was not a word said against the accounts.

Mr. PETER WATSON said it was evident the whole matter was a slur upon the past committee, who had worked very hard for the benefit of the shareholders. Mr. Bawden had distinctly stated at a previous meeting that it was his intention to retire from the partnership, and without any disrespect to Mr. Cross he (Mr. Watson), with a large number of shareholders, did not consider him the proper man to be appointed.

Mr. HAMILTON thought it was a pity to enter into any discussion, until first having decided whether the present meeting was legally constituted or otherwise. He would move that it be considered legal.—Mr. CAREEK seconded the proposition.—Mr. E. COOKE reminded the shareholders that no amount of voting could alter the legality or otherwise of a meeting.

After some discussion it was ruled that the meeting was legally constituted, and had been legally convened by requisition; upon which Mr. CADE proposed that Mr. T. P. TYACK be appointed purser.—Mr. C. BAWDEN had much pleasure in seconding the proposition, for it was not possible to select a better man.

Mr. PETER WATSON said he would put in nomination the name of a gentleman of the highest respectability, and one who held a high position in Helston, of which place he had been twice mayor. He referred to Mr. Henry Rogers, the master of East Lovell and Trumpet Consols.

Mr. E. COOKE said there could be no question if Mr. Rogers was appointed purser it would prove of advantage to every shareholder in the mine. Until Mr. Bawden had the management everything was in a most unsatisfactory condition, and now a section of the shareholders had dismissed him who had placed the affairs in a better condition than they had ever been before. With regard to Mr. Rogers, those who knew him were fully aware of his position, and also of his experience as a purser, and those who did not know him had a guarantee in the fact that he had been twice chosen as the chief magistrate of Helston.

Mr. CAREEK said that confidence would be restored by the appointment of Mr. Tyack, who had been alderman of the town.

Mr. R. H. M. JACKMAN said this was the first time he had ever heard that because a man had been a mayor or an alderman he was the better qualified to fulfil the duties of a mine purser. As far as he was concerned, he should vote in favour of Mr. Rogers, because if he were appointed it would place the mine in a satisfactory condition in the market, which it had never yet occupied.

Mr. PETER WATSON would not put the question to the vote—either Mr. Rogers should be elected unanimously, or his name should not be put in nomination.

Mr. HAMILTON said it was a question whether the gentlemen from Helston would forgive the nomination of Mr. Tyack, and propose Mr. Rogers. If those of the Helston gentlemen who were present would concur in one way, probably London gentlemen would concur in another direction.

After some further discussion, the mover and the seconder of the amendment having refused to withdraw their proposition, to the effect that Mr. Henry Rogers should be appointed purser, the question was put to a show of hands, when there appeared a majority of 10 for Mr. Rogers as against 5.

The CHAIRMAN having declared the amendment carried, Mr. CADE demanded a poll on behalf of Mr. Tyack.

Mr. PETER WATSON said that, although he held a large number of proxies, representing, probably, 1,000 shares, he should not allow Mr. Rogers's name to be put in nomination. Therefore, Mr. Tyack was elected purser.

Upon the proposition of Mr. CADE, seconded by Mr. DAVEY, it was unanimously agreed that the services of the committee be dispensed with, and that there be no committee for the future.

Mr. ROBERTS proposed that the services of Mr. Cross be dispensed with, which was duly seconded.—Mr. CAREEK proposed as an amendment that the services of Mr. Cross be continued for the present, which was seconded by Mr. CADE.

Mr. CAREEK said that Mr. Cross had been elected to the mine for several years.

A SHAREHOLDER: He has been a disgrace to the mine for several years.

The above resolution and amendment having been withdrawn, it was eventually unanimously agreed that four guineas per month be allowed to Mr. Tyack for a clerk, to be appointed by himself, and that in consequence the services of Mr. Cross be dispensed with.

Mr. ROBERTS observed that a compromise had been made with the bankers.

He wished to know if that compromise had been duly accepted on payment of the full amount?—Mr. BAWDEN replied in the affirmative, and stated that a proper receipt had been given.

The Under-Bank of Helston were continued the bankers of the company, a resolution being passed to the effect that the account shall never be overdrawn, unless with the sanction of a special resolution passed at a meeting convened for that purpose.

The appointment of Capt. Prisk as manager was confirmed, and Mr. Bawden was authorised to give up all books, papers, &c., of the company to Mr. Tyack.

Mr. E. COOKE said that Mr. Bawden was about to leave the company, he would ask the shareholders to pass him a vote of thanks for his past service. Those who had been associated with New Lovell through all its difficulties were aware what trouble Mr. Bawden had had to rescue it from the deplorable condition in which he found its affairs when appointed purser. Taking all circumstances into consideration he considered they could not separate without according to Mr. Bawden their best thanks for past services.

Mr. JACKSON seconded the proposition, which was put and carried unanimously. A vote of thanks to the Chairman concluded the proceedings.

WEST JEWELL—STARTING THE ENGINE.

On Saturday last an influential body of the shareholders and gentlemen connected with mining assembled at West Jewell Mine, to witness the starting of the large pumping-engine recently erected.

Mr. JAMES WESTON, the Chairman of the company, officiated.

The starting was successfully accomplished, prosperity being wished to the shareholders by Mr. Weston, and the wish re-echoed by the cheers of hundreds of miners engaged in West Jewell and adjoining mines.

After the monthly pay had been made, Capt. John Mayne gathered the men in front of the count-house, and the twotwelve bargains to be set were eagerly taken. Mr. Hitchins, one of the directors, addressed a few words to the men, telling them in every undertaking it was necessary for masters and men to always work together, with one spirit, and keep each others' interests in view. They, the men, could not get on without the money of the shareholders, and the shareholders were equally dependent on the labour and energy which the men brought to bear on their work. Let them do their part, and they would never have any cause to complain of their present masters. Three cheers were then called for Messrs. Weston, Hitchins, Matthew Greene, Captain Mayne, and Mr. Jenkins, the engineer.

Captain Mayne told the men he hoped in a few days to have the water out of the 12 fm. adit, when there would be many more tribute pitches to set, a piece of intelligence the men seemed delighted to hear. The company then went all over the property, with which everyone expressed himself highly pleased. A splendid autumnal day gave an additional pleasure to the proceedings.

THE DINNER.—A dinner was given in the evening. Among the company present were—Mr. Jas. Weston (President), Messrs. Josiah H. Hitchins, Thomas Rosewarne, T. R. Comyn, John Kendal, John R. Pike, J. F. Brings (of London), Matthew Greene, Dr. Richards, Capt. John Mayne, Joseph Mitchell, and Mr. Jenkins. The President rose, and in a few suitable remarks, gave the first toast, "The Queen and Royal Family." This being duly honoured.

The PRESIDENT said: Gentlemen, I have a very pleasing duty to do, and one I am sure that would be equally pleasing to any of you were you in my place. It is not for me, seeing before me so many gentlemen whose names are known far and wide in the mining world, and who are all so much more conversant than I can ever hope to be with this district, to give you any adequate and concise statement of this mine, where we have to-day performed the ceremony we are now celebrating, but I will call upon a gentleman among you to reply to the toast, whom you will listen to with great attention, for he is able to convey to you in a far clearer and more lucid manner than I the merits and advantages this mine possesses. I, therefore, content myself by asking you to drink success to the West Jewell Tin Mining Company (Limited), and call upon our honoured Vice-President, Mr. Josiah H. Hitchins, to reply.

Mr. JOSIAH H. HITCHINS rose, and said: Gentlemen, in reference to the favourable opinion that I have always expressed of this mine from the time I first inspected it, I have no hesitation, and much satisfaction, in saying that it is now much stronger than it ever was, as testified by what has since been done, allowing more to be seen, such light having been thrown on the mine (in other words, such important discoveries having been made) as to render success more clearly certain. The lode known as the Quarry lode, from which only, so far, returns have been made, and under disadvantageous circumstances, has been, and still is, turning out uncommonly well, the sales of tin, which have left a very good profit on the current working expenditure, being the best proof. The produce, which is of a most excellent character and quality, having been sold in the stone—that is to say, without the necessary preparation, for want of stamping-power—has not been made the most of, notwithstanding which, the tin sent to market fetched an unusually high price. This will, however, be remedied before long, with the necessary dressing machinery, means and appliances, now at once to be provided. The sales of tin will then ensure the fullest profit being realised by the miner. The tribute ground, from which the tin, only so far sold, has been got, is at the adit level, extending for upwards of 50 fms., and worth from 167 to 200, and 300, and 400, a fathom. There has been a shaft sunk about 140 fms. west of the 57 fm. level workings on this lode, which is already sufficiently productive to more than defray the cost of sinking, although only as yet a depth of 17 fms. has been attained. This is being in whole ground, 200 fms. in extent, and so far to the west of the rich tin ground below, cannot but be considered very important; it may almost be said to guarantee that there will be a regular, continuous, and valuable course of tin all through this part of the mine. Judging also from the general character of the lode at the adit level, there is no room for any doubt as to its being equally rich in depth. This lode alone, in my opinion, stamps West Jewell as being a very valuable mine, and it is for the deeper development of it, as well as the other lodes in this mine (of which there are many), that the 54-in. cylinder engine and machinery, this day set to work, have been erected. The operations on Freeman's lode south, near Wheal Damsel, have been attended with very satisfactory results; in fact, important discoveries. Suffice it to say, this lode has been proved to a depth of 27 fms. by a shaft, and opened out by levels in the usual way for about 40 fms., being productive, more or less, throughout, worth from 81 to 101, and 121, per fathom, and not costing more than 27 per fathom to work; the lode is a profitable one. It being seen how well the produce of this lode now stamping and in course of dressing is turning out, there are offers made to work it at one-half tribute, which, however, will have to be further considered before being accepted. From what has been seen of this lode, the chances greatly preponderate in favour of the opinion that it will prove a productive one; indeed, it may be said that enough has already been seen of it to establish, with certainty, that it is a valuable one. At a moderate calculation, such as is to be safely relied on, the tribute ground already opened out in this part of the mine represents a value of £60,000/-, which is great success, considering the little that has been done; although it is a great deal, taking into account the short time only that these workings have been in hand. The position of this mine needs no other than a passing allusion, its claim to be considered a good one resting on very strong grounds, being in the most renowned mining districts of Cornwall; in fact, in the midst of some of its richest mines, with similar rock formations, elevans, and cross-courses, the lodes being analogous; indeed, several of them being the same. From the foregoing it must be clear that I set a high value on West Jewell, which, indeed, I really do, and I firmly believe that West Jewell will be a high position among the dividend mines of Cornwall. Mr. Chairman and gentlemen, I thank you for your kind reception.

The PRESIDENT again rising: I must say I am somewhat at a loss for words sufficiently strong to express to you the high appreciation in which I hold the character and abilities of the person whose health I now ask you to drink. We have had some experience to-day of the energy and enthusiasm he throws into his work, and I can assure you I never met with a man who seemed to go more thoroughly heart and soul into any undertaking than he. Were the whole of the property his, and all the riches we feel so confident of getting out of it going into his own pocket, he could not give it more of his time, energy, and thought, looking into every detail, incessantly at work upon it, and feeling only too happy in knowing the confidence he has in the early success of the mine is shared by the gentlemen present. In asking you to drink the health of our worthy and indefatigable manager, Capt. John Mayne, I will tell you one thing, it is this—he had Capt. Mayne been possessed of more of the sinews of war none of us would have been here to-night to drink his health; but, fortunately (or unfortunately, as he pleases), he had not the means to fulfil all the covenants contained in the leases of the property within the time prescribed, and was obliged to call upon others to help him. Had he had the means, such is his high opinion of the mine that he would have worked it entirely by himself, looking to no distant day when he would be immeasurably rewarded for his exertions.

The toast was enthusiastically responded to.

Capt. MAYNE, in presenting the usual compliments to the President, congratulated those gentlemen who were fortunate enough to hold an interest in West Jewell, inasmuch as he believed a short time would pass before they would receive double or treble the amount they had put into it. They had met that day under very favourable circumstances; indeed, he thought it would be a difficult matter to find a parallel case, where a mine so recently set to work produced such extraordinary results—where only a few tributaries since March last raised about £60,000 worth of tin from the back of the adit, the lode still standing whole below. All the stuff raised gave an average produce of 200 lbs. black tin per ton of stuff. Had it not been for the clauses in two leases, which compelled him to erect an engine and suitable machinery, for which of himself he was not equal, they would not have been there, as he intended to work this mine by himself, and should have done it at an immense profit. They commenced to sink Greene's shaft on April 14 last, and since that time they have sunk 50 fms., trapping the shaft 9 ft. by 5 ft. within timber, put in four sets of bearers, cut two cistern-plats, and fixed pumps complete to 50 fms. below surface, and are now pumping the water to the satisfaction of all concerned. At about 140 fms. west of this shaft, on Greene's south lode, they had sunk Sir Frederick's shaft 17 fms., 2 ft., 9 ft., by 5 ft., lode in the shaft worth 121 fms. per fathom; and 8 fms. above all the lode will be taken away on tribute for tin. They had also sunk Freeman's shaft 28 fms. from surface, and had driven the 17 fm. level east and west about 50 fms., discovering sufficient tin to pay all cost incurred up to this date, this being altogether a new lode. He would further remark that he discovered a cross-cut driven from Rein's to Freeman's shaft, which is about 50 fms. In this cross-cut were two lodes, the character of which would induce any practical miner to "venture his jacket" in working them. These lodes, east of the county cross-course in Wheal Jewell sett, gave immense riches. His principal object in starting the mine was the fact that he believed that there

must be a great deposit of tin from Odge's cross-course to the county cross-course, which is 70 fms. in length, where two men in two months in the 17 fm. level raised 17 tons of black tin, worth at the present price of tin from 75/- to 80/- per ton; and the 30 fm. level gave similar results. This lode has been cut in the 57 fm. level, and there, too, is said to be equally rich for tin. As the tin is dipping east, by sinking Greene's shaft from the 57 to 10 fms. below this shoot, the tin would be intersected, and would give the great prize of 1871. By driving 20 fms. from Tregonning's shaft to Sir Frederick's they would have tin ground in which his name had been mentioned in connection with West Jewell.

The PRESIDENT: Another very necessary officer of the company whom I must ask you similarly to honour, and who has been almost the most important man to-day, is Mr. Jenkins, the engineer, who, with his partner, Mr. Mitchell, has erected the engine just started. It need scarcely be said that seldom has an engine been put up better and more expeditiously, or one started with less obstacles, than ours at West Jewell; and I do think great credit is due to the engineers for the sati-factory manner in which they have done their work.

Mr. JENKIN said he knew how to make and start an engine, but for the life of him could not make a speech. He was much obliged to them for drinking his health, and felt perfectly satisfied in knowing they were content with the way in which he had performed his duty.

The PRESIDENT: While proposing Capt. Mayne's health, I informed you how narrow was the chance of our ever

statement, which might be greatly enlarged, and the hopeful prospect before us, which admits of more brilliant colouring, but fearing by this time I have exhausted your patience, allow me to close these remarks by wishing continued success to the West Jewell, and by thanking you again for your kind reception and encouragement.

Mr. J. F. BRINGES (engineer from London) gave a few practical remarks respecting the stamping and dressing arrangements. He said he had lately purchased 100 shares in the mine, but he seen it before taking them, he would most certainly have possessed himself of three times that number.

Capt. JOSEPH MICHELL stated that he was born in the parish of Gwennap, and had been engaged all his lifetime in the mines of that district. He had visited West Jewell Mine on many occasions; the more he saw of it the more he was convinced of its value, and he most confidently believed—in fact, felt certain—that the mine would very shortly pay from £12,000, to £18,000, in profit. These were magnificent results, but the appearance of the lode already laid open fully justifies his statement.

The courteous behaviour of the President having been duly recognised, the business was brought to a close.

At the Llywernog Mining Company meeting, on Monday (Mr. A. Bridge in the chair), it was stated by the managing director (Mr. Balcombe) that more capital must be raised, and he was quite satisfied that the facts only required to be accurately known to induce an equitable contribution of the capital necessary to carry on the undertaking, now that the mine is, for the first time, in a position to be developed with economy. He has great faith in the future of the mine, and as a large holder of its shares, was prepared to take his quota of the increased capital. The report and accounts having been adopted, a resolution was passed to the effect that the meeting considers great credit is due to the managing director of the company for the prompt and economical manner in which the work of the faulty shaft of the mine has been brought into effective use; and relying on the various reports made upon the property, together with the estimate of economy to arise from the future workings, this meeting is further of opinion that every effort should be made by all the members to provide equitably and reasonably the funds necessary for the active prosecution of the mine; that a re-allocation of the 5000 shares be *pro rata* made, and that payment of the same be allowed to be made in full subject to 10 per cent. discount; or by four equal instalments on Dec. 1, 1870; April 1, July 1, and Oct. 1, 1871; and that in the event of such re-allocation not being accepted by each member on or before Nov. 21, the managing director be instructed to convene a special general meeting to consider the financial position of the company, and to pass such resolutions as may then be deemed expedient.

RUSSIAN (VYKSOUNSKY) IRON WORKS COMPANY.

A general meeting of shareholders was held at the City Terminus Hotel, on Monday.—Mr. W. AUSTIN in the chair.

The notice convening the meeting having been read, the report of the directors (which appeared in last week's Journal) was taken as read.

The CHAIRMAN, in moving the adoption of the report and balance-sheet, drew attention to the improved financial position of the company, and stated that the legal proceedings in Russia were really the only element in their affairs which caused the directors any concern. Negotiations had been entered into with the Messrs. Shepelev (the former owners of the estate), and terms had been offered by the company, which he considered they were very imprudent in not accepting; the litigation, therefore, was proceeding.

They had succeeded in putting the company in a better financial position, and he hoped that by the time any result took place from the litigation they would be in a position to satisfy all demands made upon them; and in that case it could be attended with the same unfortunate results to the company as it might be if they were in a less favourably favourable situation. The other claims, which had been pending for some time, arose out of contracts made before the company took possession of the works;—therefore, were rather charges against the Messrs. Shepelev than against the company, and the company had hitherto resisted these claims with success, and he hoped they would continue to do so. On one occasion there had been a decision against them in an inferior Court, but that had been overruled by the Senate, and he hoped they would be successful in the future. The Government had behaved very liberally towards them, and more especially in advancing 250,000 rubles to carry on the rail-mill, which they had subsequently found they could not carry on at a profit. The Government had consented to allow the company to repay that loan in instalments, extending over ten years; and the other debt, of 195,000 rubles, arrears of taxes, and other payments had also been allowed to be distributed over a series of years. These amounts formed annual charges upon the company, and for a limited time it was as much as could be done to keep those payments down; but he was glad to be able to say that their profits were so good that they had made those payments so far, and that they saw their way to meet the next instalments, and to keep a sufficient amount in hand to provision the works for the next winter. This was a matter of very considerable congratulation, considering the difficulties they had had to pass through. The accounts had been audited by Mr. Clarke, the secretary. While at the works Mr. Clarke had carefully looked into the accounts, and the board contented itself on this occasion with his audit; the auditors had also looked through the accounts, and their report had been circulated among the shareholders. He might mention, while upon the question of accounts, that the year's provision of the 2,000 rubles had been charged, which had diminished the debt to the Government to that extent, and the annual payments on account of the arrear of taxes had also been paid—these things could not fail to increase the confidence of the Government authorities in St. Petersburg as to the mode in which the company carried on its operations. The debt for mining taxes had been reduced to 194,000 rubles; the general account had been slightly increased, but the balance of profit and loss in London showed a very much more favourable result than it did last year—the amount then stood at 755L, whereas it was now 14,040L. On the other side of the account there were several items which were satisfactory—for instance, the cash in hand and the stores account, and although the profit had increased so much, the general charges of the business were almost the same. This last item reflected the very greatest credit on their manager, Mr. Mackenzie. The London charges had also been reduced, and the directors had consented to take one-half only of their former remuneration. Having referred to several other items, he (the Chairman) proceeded to read extracts from Mr. Clarke's report on the audit, in which it was stated that he found everything perfectly correct in the cashier's department, and that, notwithstanding the derangement of business on account of the war, contracts had been effected at still higher rates than last year. With such a large balance in hand, he (the Chairman) had no doubt, some shareholders might think it right that a dividend should be declared; but he could not express his feelings stronger than to say it would be highly inexpedient, and for this reason—the works had been in considerable difficulties, and it had only been with the most anxious care that they had been able to weather the storm—at the same time the iron trade was not in such a position as could be desired. Therefore, although this year the profits had been larger than the last, and he believed the next year would be an improvement upon this, yet there was an uncertainty in their position, and they ought to provide against contingencies. Mr. Clarke was doing all he could to promote the best interests of the company, and he (the Chairman) confidently hoped that before long the litigation would be in such a state that they would be able to reap the reward of their operations. The largest shareholders were among the directors who would welcome a dividend quite as much as any shareholder, if it were expedient to declare one. He then moved the reception and adoption of the report and accounts.

Col. ELSAY seconded the proposition, which, after a brief discussion, was put and carried unanimously.

The retiring directors and auditors were re-elected.

A vote of thanks to the Chairman and directors concluded the proceedings.

VANCOUVER COAL MINING AND LAND COMPANY.

The half-yearly general meeting of shareholders was held at the City Terminus Hotel, on Tuesday,

The Hon. C. W. W. FITZWILLIAM, M.P., in the chair.

Mr. ROBINS (the secretary) read the notice convening the meeting.

The report of the directors (which appeared in last week's Journal) was taken as read.

The CHAIRMAN said he could not congratulate the shareholders upon the same satisfactory results during the past six months as during the preceding half-year, inasmuch as the accounts showed a considerable reduction in the quantity of coal raised, as had been seen by the report, the output being 5686 tons, as against 10,475 tons. Notwithstanding this reduced scale of production, the directors were able to declare a dividend of 5 per cent. for the half-year, being at the rate of 10 per cent. per annum, which he hoped would meet with the approbation of the shareholders. The question of dividend was fully discussed by the board, by whom it was cordially agreed to adopt the course now proposed. There was a large accumulation of coal at bank—indeed, than at any previous time; and with the view of reducing it they had had to reduce the price, although they could not congratulate themselves upon the success of that step at present. They hoped, however, things would change before long, and they would be able to work off a large proportion of their stock. There were considerable stocks at San Francisco, chiefly Sydney coal. Vessels were sent from Australia to San Francisco freighted with coal, in the expectation of being able to return with freights of wheat, which, owing to the disturbed state of Europe, was anticipated would be greatly enhanced in price. He then read extracts from the agent's letter, and stated that there was one cheering feature in this matter, and that was that there were now very many ships at San Francisco seeking freights, which would deter other owners of ships from sending fresh supplies of coal. He then moved that the report be received and adopted.

Mr. GALSWORTHY seconded the proposition. In reply to a question, he stated that as the reduction in the price of coal was regarded as a very temporary matter, it would not be prudent to state the amount of the reduction. As to the new slope, which had cost something like 50,000L, only a small amount had been charged during the last half-year; all the rest had been paid out of previous profits. The directors considered they had good reason to congratulate themselves upon the fact that they had taken advantage of prosperous times for carrying out and paying for this important work, and that they had only now to charge a small proportion out of the half-year's profits.

Mr. J. WILD, in reply to questions, stated that as far as the company's mine was concerned nothing could be more satisfactory—what was wanted was a more active market for their produce. Of course, being traders they were liable to the fluctuations incident to the trade in which they were engaged. He hoped the lowest price had now been reached. Since July 1 the quantity of coal sold had been over 10,500 tons, which was almost equal to the whole sale of the previous six months. They had this great hope, that the larger the quantity produced the cheaper it could be brought to market, the expenses being just the same whether 100 or 200 tons were brought to surface. If instead of raising 30,000 or 40,000 tons a year at 12s. per ton, they could raise 60,000 tons at 8s., they would be able to successfully meet even worse times than the present. As a mine, they were only at the beginning of their undertaking, the last slope having developed, according to a safe computation, not less than 400,000 tons, which was, of course, in addition to that which remained above the slope. Under ordinary

circumstances, therefore, he thought this company should be able to continue to pay its present rate of dividend. He then referred to the satisfactory results attending the development of coal in a neighbouring island, the freehold property of the company. A mine was being opened there, worked by contract, and it was supposed that the seams underlie the whole of the island. The seam at present being worked was 6 ft. thick—4 ft. coal and 2 ft. shale. To make this a permanently successful concern they must develop the property as quickly as they could, and sell their produce for what it would fetch. He believed that in such a country there should be no difficulty in raising any quantity of coal, nor in selling it at a price which would leave a remunerative dividend to such a company as this.

The motion adopting the report was put and carried; and a dividend for the half-year at the rate of 10 per cent. per annum was declared.

A vote of thanks to the Chairman, directors, and secretary concluded the proceedings.

UNITED MEXICAN MINING COMPANY.

The ordinary half-yearly general meeting of shareholders was held at the offices, Great Winchester-street Buildings, on Wednesday,

Mr. CHARLES MORRIS in the chair.

Mr. BROWNE (secretary) read the notice convening the meeting.

The report of the directors stated that the general operations in Mexico for the six months ending June shows the outlay on the old undertakings to have exceeded the returns by £3066, and that £17,578 has been expended on works for opening out the new property. Mr. Furber has however stated that the six months' operations in the "old concern" may be considered to have been carried on without loss, as there are one or two items of profit appertaining to that period which cannot be accurately ascertained before the end of the year. Mr. Furber's best efforts continue to be directed in conducting the mining operations with all possible economy, and much credit is due to him for having so managed the funds under his control that he has only had occasion to draw on the directors this year to a limited extent, notwithstanding the large outlay on the new concern. With regard to the new concern, it was stated that the driving of the adit has been advanced as rapidly as the rocky nature of the ground and the want of ventilation permitted, and which, during its progress, passed through several small lodes, some looking pretty, though without silver, but these cannot be explored till the junction is effected. Owing to the hardness of the rock and excessive heat there has not been that amount of driving which was calculated on in May last, consequently it will take a longer time to connect the adit with the shaft than contemplated, and at the end of August the distance then to be traversed was about 60 varas. Mr. Furber, in his September letter, having reported that the ground on the Buenos Ayres side had become more favourable for driving, and that they were getting on faster, there appears every probability that the works will be completed in the early part of October. On reaching in May last a depth of 180 varas in the shaft at the mine of Buenos Ayres, a cross-cut was opened towards the lode, and after being advanced 12 varas, a driving was commenced to meet the adit of San Cayetano, and found to be vein stuff. At the mine of San Antonio de la Ovejera, in June last, the shaft being down a depth of 231 varas, a cross-cut was opened in July towards the lode. Subsequently it was found necessary to sink the shaft some 3 or 4 varas to form a deposit for the water expected to be met with on cutting the lode. In the last report Mr. Furber states that "the shaft is finished, and we are at work again on the cross-cut. The rock is still very hard in it, but the lode cannot be far distant, though as these veins in La Luz district all get steeper in the depth, we can only guess by inference from what we have seen in other mines where it will be struck."

The CHAIRMAN said there was no new feature to which he could direct the attention of the shareholders. All he could do was to ask them to exercise patience until the adit had been communicated with the shaft, when exploratory operations would be commenced, which there was every reason to believe would be productive of beneficial results. Mr. Furber reported that the work was steadily progressing at the rate of 15 varas per month, so that the junction should be effected about February. The indications were most favourable that their operations would be crowned with success. He was glad to be able to inform them, from all the accounts received, that Mexico was becoming more and more tranquil and settled, although it was still far from what they would all like to see it. The President appeared to be a man of energy and decision, and anxious to promote the interest of the country, and if he should be elected for four years, as seemed probable, he would no doubt be able to select a Government which would protect the labour and property that they had a right to expect in a country in which they embarked capital. He then moved that the report and accounts be received and adopted.—Mr. WRAY seconded the proposition.

A SHAREHOLDER asked when it was likely a dividend would be made?

The CHAIRMAN said that no call would be made before March, and perhaps not till May. Sanguine people imagined that it would not be necessary to make any call at all, but he neither promised nor indicated that such would be the case.

Mr. W. WILLIAMSON (a director) reminded the shareholders that when it was agreed to subscribe additional capital it was stated that a proportionate amount would probably be required at certain periods, but the executive, by some means or other, had been able to go far beyond those periods without making the expected calls. Funds had been derived from the old works, and the company was in a good financial condition.

A SHAREHOLDER asked if there were any preference shares or debentures?

The CHAIRMAN said that there were neither the one nor the other—there were nothing but the ordinary shares.

The motion adopting the report and accounts was then put and carried unanimously. A vote of thanks to the Chairman and directors concluded the proceedings.

UNITED STATES' IRON MANUFACTURES.

The special correspondent of the *New York Times* has been visiting the Cambria Iron Works, at Johnstown, about 78 miles from Pittsburgh, the largest industrial establishment in the country. It is owned, as a stock company, by a few Pennsylvania capitalists of the "heaviest" description. Its product is almost solely railway iron. The marked peculiarity is that its manufacture embraces every stage, from mining the ore and coal to the delivery of the finished product. It owns its coal and iron mines, smelts its iron, refines and rolls it, builds its own machinery, makes its brick and mortar, erects all structures, and seldom goes beyond its own resources to procure any of its material. It gives employment to about 4800 workmen, the bulk of whom last year was 76,000 tons of railway iron from the value of which was about £5,000,000; and if to this we add the value of labour converted into fixed capital, in the form of buildings and machinery, we shall have a total of nearly £5,500,000.

This correspondent says:—"The Cambria Company have naturally followed the policy of uniting under one control all the necessary parts of a great branch of industry, because their works are located where iron and coal lie in juxtaposition. Two seams of coal are mined, one of which is exposed in the hill side near the works, with a thickness of 4 ft. The other lies some 50 ft. lower, and is mined within a few rods of the furnaces; it is of a soft bituminous variety, and cokes very well. The volatile matters of the coal (hydrocarbons, water, sulphur, &c.) exercise little reducing effect upon the ore, and are more or less deleterious; and as they may be reckoned nearly as much loss any way, the proper method is to drive them off by coking. Almost universally throughout the State of Pennsylvania this is done in the good old barbadoes way of piling it in heaps, care being taken to leave air channels at the bottom, with vents at the top protected by larger lumps. Only 10 per cent. of coke is yielded by this method, much of the fixed carbon being burnt, and on the outside of the heap being subjected to loss of volatile matter, without 'caking' or softening, and is, therefore, lost. Great banks of dull-gray carbonaceous powder may be seen around such places forever lost to all utility. The Cambria Company are now introducing ovens with signal success, in which the yield of coke is 60 per cent., and the labour of coking actually less than by the old method, while the quality of the coke is immensely improved. The ores used at Johnstown are the red and brown haematites, the red being known as fossil ore, which is common enough throughout the Alleghany region, and not all excellent in quality. The brown haematite is derived from a bank adjoining the furnace, and was originally very rich and good, but has deteriorated so much in quality that, whereas it was smelted ten years ago for 2s per ton, the cost has now risen to 2s 6d per ton, and it requires 2½ tons of coke to make 1 ton of white iron. I dare not criticise the superb management of the Cambria Company. I presume that there is a reason for it, but I am amazed that Americans are content to be in considerable difficulties, and it had only been with the most anxious care that they had been able to weather the storm—at the same time the iron trade was not in such a position as could be desired. Therefore, although this year the profits had been larger than the last, and he believed the next year would be an improvement upon this, yet there was an uncertainty in their position, and they ought to provide against contingencies. Mr. Clarke was doing all he could to promote the best interests of the company, and he (the Chairman) confidently hoped that before long the litigation would be in such a state that they would be able to reap the reward of their operations. The largest shareholders were among the directors who would welcome a dividend quite as much as any shareholder, if it were expedient to declare one. He then moved the reception and adoption of the report and accounts.

Col. ELSAY seconded the proposition, which, after a brief discussion, was put and carried unanimously.

The retiring directors and auditors were re-elected.

A vote of thanks to the Chairman and directors concluded the proceedings.

VANCOUVER COAL MINING AND LAND COMPANY.

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The Hon. C. W. W. FITZWILLIAM, M.P., in the chair.

Mr. ROBINS (the secretary) read the notice convening the meeting.

The report of the directors (which appeared in last week's Journal) was taken as read.

The CHAIRMAN said he could not congratulate the shareholders upon the same satisfactory results during the past six months as during the preceding half-year, inasmuch as the accounts showed a considerable reduction in the quantity of coal raised, as had been seen by the report, the output being 5686 tons, as against 10,475 tons. Notwithstanding this reduced scale of production, the directors were able to declare a dividend of 5 per cent. for the half-year, being at the rate of 10 per cent. per annum, which he hoped would meet with the approbation of the shareholders. The question of dividend was fully discussed by the board, by whom it was cordially agreed to adopt the course now proposed. There was a large accumulation of coal at bank—indeed, than at any previous time; and with the view of reducing it they had had to reduce the price, although they could not congratulate themselves upon the success of that step at present. They hoped, however, things would change before long, and they would be able to work off a large proportion of their stock. There were considerable stocks at San Francisco, chiefly Sydney coal. Vessels were sent from Australia to San Francisco freighted with coal, in the expectation of being able to return with freights of wheat, which, owing to the disturbed state of Europe, was anticipated would be greatly enhanced in price. He then read extracts from the agent's letter, and stated that there was one cheering feature in this matter, and that was that there were now very many ships at San Francisco seeking freights, which would deter other owners of ships from sending fresh supplies of coal. He then moved that the report be received and adopted.

Mr. GALSWORTHY seconded the proposition. In reply to a question, he stated that as the reduction in the price of coal was regarded as a very temporary matter, it would not be prudent to state the amount of the reduction. As to the new slope, which had cost something like 50,000L, only a small amount had been charged during the last half-year; all the rest had been paid out of previous profits. The directors considered they had good reason to congratulate themselves upon the fact that they had taken advantage of prosperous times for carrying out and paying for this important work, and that they had only now to charge a small proportion out of the half-year's profits.

Mr. J. WILD, in reply to questions, stated that as far as the company's mine was concerned nothing could be more satisfactory—what was wanted was a more active market for their produce. Of course, being traders they were liable to the fluctuations incident to the trade in which they were engaged. He hoped the lowest price had now been reached. Since July 1 the quantity of coal sold had been over 10,500 tons, which was almost equal to the whole sale of the previous six months. They had this great hope, that the larger the quantity produced the cheaper it could be brought to market, the expenses being just the same whether 100 or 200 tons were brought to surface. If instead of raising 30,000 or 40,000 tons a year at 12s. per ton, they could raise 60,000 tons at 8s., they would be able to successfully meet even worse times than the present. As a mine, they were only at the beginning of their undertaking, the last slope having developed, according to a safe computation, not less than 400,000 tons, which was, of course, in addition to that which remained above the slope. Under ordinary

America or Europe, for that purpose, and the plant is magnificent throughout. A woollen mill has also been established at Johnstown for supplying occupation to the wives and children of the men employed in the iron works.

Original Correspondence.

COAL-CUTTING MACHINERY.

SIR,—In reply to the letter in the Supplement to last week's Journal, signed "Collier," will you oblige me by inserting the following? If our friend "Collier" wishes to do any good to humanity he would act wisely in upholding rather than destroy confidence in the mechanical operations of coal getting by machinery, and it would be far more honourable of him to give his proper name, and instead of merely thinking things are different to what they are represented in the *Mining Journal* to state right out that they are false: we should then know what to do with him. As for myself, I assure him the account represented was a very modest one, and positively underrated the abilities of my machine; as, for instance, not one word was said respecting the pressure of air required during the machines operations, for only from 10 to 15 lbs. pressure was required; and in respect to the saving effected by my machines over hand labour, it is one-eighth, and not one-eighth per ton as represented. And in respect to the cutting operations, for the information of our friend "Collier," since it is evident, judging from his remarks, he has not seen my machine, I would invite him to come and see that the cutting motion is as he proposes it should be, and draws the machine to its work.—*Albion Foundry, Wakefield, Nov. 10.*

F. HURD.

COAL-CUTTING MACHINERY.

SIR,—The letter signed "Collier," inserted in the Supplement to last week's Journal, seems to be written in a carping spirit towards all coal-cutting machine makers; and, considering that your representative had actually seen Mr. Hurd's machine do the work reported upon by you, which cannot but be regarded as most satisfactory, there must be some private reason

ales. The stone-breaker is on its way, and will be delivered this week; the new engine to drive it will follow the week after; every energy is being used to forward the works. The mine is at present making a monthly profit on the sales of tin, the erection of machinery and plant being charged to capital account, provided for and guaranteed by the promoters, only the cost of production and dressing the tin ore being brought against the yield. The great elvan continues the same as heretofore. Edwards's lode has improved very materially; large stones have been taken out, containing fully one-half black tin. Preparations are being made for erecting the increased stamping-power to 200 heads, but some indecision has taken place as to the best method. A trial of the newly-invented pneumatic-stamps, and the improved steam-stamps, as well as of the best known old adaptation, will shortly take place, after which, those affording the best results will be immediately erected. Should it be found necessary, a good engine will be placed on Edwards's lode, this important part warranting the outlay; in fact, it would of itself have constituted a most valuable and productive mine.

TREVARRACK MINING COMPANY.—An excellent engine, purchased from North Shepherds Mine, was set to work at Trevarrack, on Oct. 27, in presence of Dr. Collis Browne, the Chairman, and a number of other persons. At the suggestion of Capt. Pope, the engine will be called Browne's engine, and the shaft Browne's engine-shaft. Mr. J. B. Reynolds requested the miners to avoid intemperance, and attend to their duties at the mine; and Dr. Collis Browne, as the first toast at the luncheon, drank "Success to the Trevarrack Mine," and the health of Mr. Reynolds. The toast was responded to by Mr. Reynolds, who concluded by drinking the health of Capt. Pope. Capt. Thos. Uren, jun., reported on Nov. 9 that the machinery is working well.

GREAT ROYALTON.—The important improvement at the 16 fathom level, on King's lode, continues to hold good. The lode is very rich, and, although it has been cut into 12 ft., the other wall has not yet been seen. The engine-shaft is being sunk as rapidly as possible to cut the water, which is now increasing in the shaft. The agent expects soon to have an ample supply to dress the immense amount of rich tin-stuff discovered. To expedite returns, the management have erected a repeating-lift on the dressing-floors, which will greatly economise the water. The mine is attracting a great deal of attention.

WEST PANT-Y-GO.—A very important discovery has taken place in this mine, which is likely to result in bringing the property into a paying state. The lode is worth 4 tons of lead ore per fathom, and whole to surface. They expect almost daily to cut the Hereth lode, which is very rich in the adjoining mine, and they have two other lodes to cut at deeper levels. Altogether the prospects are most cheering. Shareholders should ascertain the extent of the improvement from the secretary before being persuaded to sell their shares.

ABERDAUNANT.—This mine is about to send to market some 20 tons of lead, and the sale of a second parcel may be speedily looked for. The mine is much improved, being productive in every point now being worked, the No. 2 adit especially, it having increased double in value in less than a month.

NORTH ALLT-Y-CRIB (SILVER-LEAD), TALLYBONT, CARDIGANSHIRE.—This property has been recently inspected by Capt. Joseph Richards, of the Devon Great Consols, and Capt. Charles Williams, Talbont, whose reports state that 1 ton of ore, worth 150*l.*, was being raised monthly by eight men. The western end on the east west lode was reported worth 30*l.* per fathom, and the eastern end worth 20*l.* The rise on the north and south lode is worth 15*l.* per fathom. For the satisfaction of the directors the Chairman visited the mine on the 1st instant, and has fully confirmed the agent's report, since which the agent has reported an improvement, the western end being worth 40*l.* per fm. Already 60*l.* worth of ore is on the floors, and the prospects are daily increasing. Machinery and tramroads are about being provided, when dividends may immediately be expected from sales of ore from the adit level alone. The lode holds down in the bottom of the level wider and richer than at any other point opened, thus giving great expectations for following the lode in depth. Capt. Chas. Williams (Nov. 7) reports—"The No. 1 lode in the west end of the stope is much improved, being to-day worth 40*l.* per fathom for lead and silver ore."

At Poldice there are 100 men employed on tutwork, sinking winzes, and driving ends. They are expending 30*l.* or 40*l.* a month in developing the mine, and they have 100 fathoms of tin ground which can come away at a fair rate of profit. They are working about 100 fathoms below the deep adit, which is the same as unwatered Clifford and United Mines. This country adit is about 6*l.* wide and 5*l.* high, and it has been kept in good order at great expense from time to time. Poldice was once worked as St. Day United, in 20,000 shares. Poldice is a very curious old mine, having been at work for hundreds of years; there are scores of lodes in it yet to be developed, it is said, and probably, it is one of the best ventilated mines in the world, there being not more than 100 shafts in the sett. A large number of hands are employed on the surface, and 240 or 250 underground. They are now altering one of the old engines to a 65-inch cylinder; this will give them ample power, and even if the water should rise 20 fathoms scarcely any portion of the mine now working will be injured. We understand every precaution has been taken, by putting in dams, to prevent the water running into Poldice from the adjoining sets of Clifford and United.

OPEN STOCK EXCHANGE.—Quotations of the Sale on Nov. 8:—
Aberdannant Lead Mining Company (Limited), fully paid, 12*s.* 6*d.* per share.
Anglo-Argentine Company (Lim.), 15*s.* per cent. pref., 12*s.* pd., 10*s.* 6*d.* per share.
Anglo-Brazilian Gold Company (Limited), 11*s.* paid, 5*s.* per share.
East New Wheal Lovell Tin Mine (Cost-book), all calls paid, 2*s.* per share.
Eclipse Gold Mining Company (Limited), 15*s.* paid, 1*s.* per share.
Frontino and Bolivia Gold Mining Co. (Limited), fully paid, 7*s.* 6*d.* per share.
Great Wheal Ver Tin and Copper Mine (Cost book), all calls paid, 6*s.* 6*d.* per share.
Guerrero Gold Mining Company (Limited), fully paid, 2*s.* per share.
New Quebrada Company (Limited), fully paid, 6*s.* 3*d.* per share.
Ross Grande Gold Mining Company (Limited), fully paid, 7*s.* 9*d.* per share.
Sweetland Creek Gold Mining Company (Limited), fully paid, 2*s.* 6*d.* per share.
The following are the quotations of the Sale yesterday:—
Almada and Trito Consolidated Silver Mining Company (Limited), fully paid, 1*s.* 6*d.* per share.
Anglo-Argentine Company (Limited), fully paid, 14*s.* 3*d.* per share.
Anglo-Brazilian Gold Company (Limited), 11*s.* paid, 4*s.* 3*d.* per share.
Australian United Gold Mining Company (Limited), fully paid, 8*s.* per share.
Braganza Gold Mining Company (Limited), 15*s.* paid, 9*s.* per share.
Don Pedro North del Rey Gold Mining Company (Limited), 14*s.* paid, 2*s.* 15*s.* 6*d.*
Eclipse Gold Mining Company (Limited), 15*s.* paid, 12*s.* per share.
Frontino and Bolivia South American Gold Mining Company (Limited), fully paid, 6*s.* 6*d.* per share.
General Brazilian Mining Company (Limited), 16*s.* paid, 14*s.* 6*d.* per share.
Nevada Land and Mining Company (Limited), fully paid, 2*s.* 4*d.* per share.
New Zealand Quartz and Gold Crushing Company (Limited), fully paid, 10*s.* 6*d.*
New Quebrada Company (Limited), fully paid, 5*s.* 9*d.* per share.
Ross Grande Gold Mining Company (Limited), fully paid, 8*s.* 2*d.* per share.
Taquari Gold Mining Company (Limited), 14*s.* paid, 2*s.* 6*d.* per share.

The Bank of England return for the week ending on Wednesday evening showed in the ISSUE DEPARTMENT an increase in the "notes issued" of 69,840*l.*, which is represented by a corresponding increase in the coin and bullion on the other side of the account. In the BANKING DEPARTMENT there was an increase in the "public deposits" of 177,714*l.*; in the "other deposits" of 65,932*l.*; in the "seven day and other bills" of 22,798*l.*; and in the "rest" of 37,761*l.* = 665,279*l.* On the other side of the account there was an increase in the "Government securities" of 119,131*l.*, and a decrease in the "other securities" of 79,490*l.* = 39,641*l.*: leaving a total increase in the reserve of 625,638*l.*

DIAMOND MINING.—Some useful information will be found in the Supplement to this week's Journal; and we may state that there is no abatement of the diamond fever at the Cape, and no prospect of any. The president of the Transvaal Republic has signed the diggers' rules, and according to the latest accounts was working away like any other digger; several of the colonial and civil servants, both at Natal and throughout the Cape colony, have obtained leave of absence and gone off to the diggings; and we are assured by the *Natal Mercury* that there will soon not be a home in the colony unrepresented by one or other of its members at the diamond fields. Further, we are told that the threatened exodus of the working power of Natal is beginning to acquire alarming proportions. We need not be much surprised that such should be the first result of this discovery. Good honest labour is hard, and not so profitable but that those whose living depends upon it should be only too eager to make a fortune in an easier way. Men too often run after a shadow rather than work until they can grasp the substance. At the same time we have no doubt that the discoveries in the valleys of the Vaal and the Orange river are genuine and substantial. They are evidently every whit as real as the gold discoveries of California or Australia, but the country is at present a barren and inhospitable one, and the pursuit of wealth may result in anything but the realisation of the dreams which make the future to these eager emigrants look so bright. And yet the temptation is very great. Diamonds continue to be found on the Vaal of unusual size, and the next mail is expected to bring far larger consignments. Then, again, we are told by Dr. Shaw, after a careful survey of the entire Vaal region, that the soil richest in precious stones has hitherto been untouched. As yet the diggers have chiefly occupied themselves with sifting the alluvial gravel, which, by a succession of strange geological changes, has been deposited on the summits of the Kopjes, and in the crevices between the basaltic boulders. In the valleys the sand overlies the gravel, and it is this gravel which forms the superior diamondiferous gravel, and until this is worked the "diamond digging of South Africa is only trifling in comparison with what it should and ultimately will be."

A letter from Cape Town (Oct. 3) says—"Yesterday 200*l.* worth of diamonds were placed in my hands by a pioneer of the washing process on the Vaal river, which the owner said he looked upon as rubbish in comparison with the bulk of what had been found. Yet they did not number more than half-a-dozen—one of 3*s.* carats—all of good shape and excellent water; and the fortunate owner states that there cannot be less than 10,000*l.* worth of diamonds per week bought by the merchants on the fields. The probably mythical character of the report which went home last mail of a monster diamond having been found I am glad to be in a position now to state is not romantic. The actual weight of the gem is 10*s.* carats. It is of pure water, octohedral in form, and will lose but very little in cutting to render it one of the finest gems yet discovered. Among the passengers homeward bound by the Norseman, to-day, is Capt. Rolleston, the celebrated leader of the Natal party at the diamond diggings. He was one of the very first explorers on the fields, and has proved himself one of the most successful. Capt. Rolleston ridicules the complaints of those who, after a few weeks' unsuccessful search at the diamond fields, turn away with a grumble, and say that there is nothing in them. He himself had been unsuccessful for six months, but he persevered notwithstanding, and ultimately secured a very abundant reward. He says it is useless for men to work single-handed. If they expect success they must work in parties. He sent a fortune home per Saxon. He now goes home to enjoy himself for a while, and to organise a company on a large scale to prospect the diamond fields. He has worked 24 miles of the Vaal river banks, sometimes digging down to 30 ft. Having been at the fields for nearly a year, and made himself acquainted with all the details of life and of work there, he is well qualified to give opinions and to advise upon the subject. He says the country is healthy enough. The people there will have to make sanitary regulations to keep it so. Everything is as cheap there as at any of the seaports, and he strongly urges upon all who may mean to go there not to do so if they are in good situations, or have a remunerative trade in their hands. Only they must go who have the means of maintaining themselves for at least

six or eight months after their arrival at the fields, who can bear disappointment and sheer hard work, and be perseveringly steady at it and in their general habits. He has come out now to avoid the short hot season. He speaks well of the people, and is anxious for a British Republic. It is said that Mr. I. Sonnenberg, of Jacobsdal, intends going to America to organise a joint-stock company to work the large grounds he possesses on the Vaal river. Mr. Wm. Webb's brother writes from Diamond Fields to Graham's Town that his nephew had picked up a diamond in the party's tent valued at 200*l.*"

CONSUMING SMOKE.—Mr. R. G. RAINFORTH proposes to apply to the fire-door an air-sprout or straight flat tube, which is inserted in an aperture made in the door of the fire-box, and placed in a slanting position, so that its internal portion shall point upwards and above the level of the fuel; the tube or sprout may be made nearly equal to the width of the fire-door, so that the air ascending from the outside of the furnace passes in a current of such width directly into the fire-place, and instantly becoming heated mingle with the smoke and other gaseous products, and remove the fire to consume them.

FATAL EXPLOSIONS.—A boiler of 36-horse power exploded at Wheal Frances, on Friday, and John Croucher, who was in a shed adjoining the engine-shaft, was struck by a large piece of the iron tube, and buried under the debris of a wall. An idea may be formed of the terrible force of the explosion from the fact that a large portion of the boiler, formed of eight plates, and retaining its position in the shell, was hurled a distance of 237 ft., furrowing the ground as it passed. On the same day there was an explosion at Wheal Agar, and two men were seriously injured. One man lost both his hands; and the other an arm, and, it is feared, his eyesight.

THE CORNISH MINE SHARE MARKET.—The advance in the tin standard this week has further stimulated business; the general tone of the market, notwithstanding the disappointing results of the proposed armistice, is at present firm and encouraging.—*West Briton.*

The Imperial Ottoman Mining Company are dispatching an additional number of miners and dressers from Cornwall to their mines near Constantinople. They have also in addition to their original English staff a force of native labourers, which they are constantly increasing. Some hundreds of tons of ore are ready, and only await the completion of the crushing machinery (now daily expected) to be prepared for market, sent home, and sold. The weekly reports of the captain show but slight variations in the value of the loads since first cut.

Advices have been received from Mexico to Oct. 10. In all probability President Juarez would be re-elected. An important amnesty has been decreed, under which many eminent and wealthy Mexicans, banished for their adherence to the late Emperor, would be re-admitted to the rights of citizenship.

This measure, it was anticipated, would prove most beneficial to the trade and commerce of the country. The Real del Monte Mining Company was earning large profits; its shares have risen in a few months from \$1250 to \$1700.

BREAKFAST—EPPS'S COCOA—GRATEFUL AND COMFORTING.—The very agreeable character of this preparation has rendered it a general favourite. The *Civil Service Gazette* remarks:—"By a thorough knowledge of the natural laws which govern the operations of digestion and nutrition, and by a careful application of the fine properties of well-selected cocoa, Mr. Epps has provided our breakfast tables with a delicately flavoured beverage which may save us many heavy doctors' bills." Each packet is labelled—JAMES EPPS AND CO., Homeopathic Chemists, London. Also, makers of Epps's Cacaoine, a very light, thin evening beverage.

CHALLENGE TO THE WORLD.—The *Bristol Daily Times and Mirror* Aug. 15th, has the following: Messrs. J. C. Swan and Co., of 16, Queen-square, in this city, have invented a pocket microscope, which is a marvel in all that such an instrument should be. It has great power, remarkable definition, and does not require focussing. The cheapness of the article will make it exceedingly popular when its merits are more widely known. It is called the "Bristol Microscope," and is a great credit to the inventor, as much for its extreme simplicity as its power.—The *Western Daily Press* says: The Bristol Microscope has a magnifying power of 24,000 times, &c.—The *Western Daily Telegraph* says: The Bristol Microscope is the most compact and useful scientific instrument we have ever seen; it possesses extraordinary power, and is very easily managed, &c. The price of the Bristol Microscope is only 2*s.*, or free by post, with printed directions, for 2*s.* stamps.—Address, J. C. Swan and Co., Opticians, 16, Queen-square, Bristol.

CURE OF ASTHMA, COUGHS, COLDS, &c., BY DR. LOCOCK'S PULMONIC WAFERS.—From Mr. John Coble, M.P.S., Broad-row, Yarmouth:—"I have great pleasure in stating that many persons, to my knowledge, have derived great benefit by the use of Dr. Locock's wafers." They give instant relief to asthma, consumption, coughs, and all disorders of the lungs, and have a pleasant taste. Price 1*s.* 1*½d.* and 2*s.* 9*d.* per box. Sold by all druggists.

HOLLOWAY'S PILLS, FOR THE CURE OF BILIOUS COMPLAINTS, INDIGESTION, AND AFFECTIONS OF THE LIVER.—Symptoms indicative of these disorders are a feeling of nausea, distension, and spasmodic pains in the stomach, sense of oppression, and sinking after eating, want of appetite, languor, depression of spirits, and general debility. The removal of the cause is the most important step, for which have recourse to Holloway's pills, as they possess such cleansing properties that the action of the liver is speedily corrected, the redundancy of the bile carried off, the stomach strengthened, the spirits revived, and the patient restored. These excellent pills keep all the natural functions so fairly balanced that they prevent or speedily subdue headache, giddiness, bilious attacks, and similar maladies.

The Rhosesmor Mining Company (LIMITED)

Incorporated under the Companies Acts, 1862 and 1867.
CAPITAL £45,000, IN 15,000 SHARES OF £3 EACH.

DIRECTORS.

W. MAYSMOR WILLIAMS, Dingle Bank, Chester, Esq.—CHAIRMAN.
THOMAS BOWERS, Queen's-park, Chester, Esq.
THOMAS HANMER, 93, Chatham-street, Liverpool, Esq.
LEIGH HOWELL, Bagillt, Flintshire, Engineer.
ROBERT NICHOLSON, Abbot's Field, Chester, Banker.
JOHN PENLINGTON, Eccleston, near Chester, Esq.
The Rev. EDWARD ROBERTS, Bunbury, Cheshire.

BANKERS—Messrs. DIXONS and Co., Chester.

AUDITOR—Mr. J. E. EDWARDS, Chester.

SOLICITORS—Messrs. WALKER, SMITH, AND WALKER, Town Clerk's Offices, Chester.

SECRETARY—Mr. JAMES WAKEFIELD, 16, Corn Exchange Chambers, Chester.

4557 shares (30*s.* paid) remain to be issued, and, as the company are prepared to issue a limited number of them on payment only of 17*s.* 6*d.* per share called thereon, the opportunity is afforded of acquiring an interest in the company, on terms equally favourable to those accorded to the present shareholders. These shares are liable to further calls to the amount of 12*s.* 6*d.* only, being safely protected, as 30*s.* paid shares, by a contract registered under the provisions of the Companies Act, 1867.

Prospectuses and forms of application for shares may be obtained from the Secretary, as above.

Vannin Silver-Lead Mining Company (LIMITED), ISLE OF MAN.

CAPITAL £15,000, IN 15,000 SHARES OF £1 EACH.

Deposit 2*s.* 6*d.* per share on application, and 5*s.* on allotment.

Calls not to exceed 2*s.* 6*d.* per share, nor to be made at intervals of less than three months.

PROVISIONAL DIRECTORS.

ALURED DUMBLE, Esq., Ramsey.
Capt. RICHARD ROWE, Manager, Great Laxey Mines.
ROBERT ARCHER, Esq., Douglas.
WILLIAM CLAGUE, Esq., Sheffield.

BANKERS—Messrs. DUMBLE, SON, AND HOWARD, Isle of Man.

OFFICES,—1, ALBERT STREET, RAMSEY, ISLE OF MAN.
ABCHURCH CHAMBERS, ABCHURCH YARD, LONDON, E.C.

This company is formed for the purpose of working, by means of adit levels, the Great Laxey and other lead-bearing lodes, which have been recently discovered, after a careful series of trials, crossing the Laxey Hills, showing good ore surface.

The most important of these has been proved to be the continuation of the Great Laxey lode, from which upwards of £1,500,000 of ore has been raised, and which is at present producing a profit of £30,000 per year, equal to 50 per cent. per annum on the capital.

The lode possesses in this sett all the most important features which distinguish it at Laxey, being intersected both vertically and horizontally by several large cross veins or slides. There is also a highly-mineralised vein crossing the sett in contact with the lodes, the whole forming a combination

which practical miners consider is certain to result in the formation of large bodies of ore.

An advantage which cannot be over-estimated in connection with the cheap and rapid development of the property is the facility that exists for driving an adit into the lodes from a deep gill within a short distance of the cross-courses and lead lodes intersecting the points of junction at a depth of fully 40 fathoms below the surface. This deep adit will correspond, I regard, semi-level, with the adit at Great Laxey, and will be as low as the deepest workings at Great North Laxey, thus attaining, without the aid of expensive machinery, the settled depth at which mineral veins in this district become permanently productive.

Applications for shares to be addressed to the Directors of the Vannin Mining Company (Limited), 1, Albert-street, Ramsey, Isle of Man.

NEW VICTORIA (SOUTH DEVON) MINING COMPANY, (LIMITED).
REGISTERED UNDER THE COMPANIES ACTS, 1862 AND 1867.
CAPITAL £20,000, IN £1 SHARES.
FIRST ISSUE, FOURTEEN THOUSAND SHARES.

SECRETARY AND LONDON MANAGER.

JOHN G. BARRY, Esq., Accountant, 8, Old Jewry, London, E.C.

LOCAL MANAGERS AND PURSERS.

[Nov. 12, 1870.]

Mining Correspondence.

BRITISH MINES.

ABERDAUNANT.—H. Frances, Nov. 9: We have to-day from 6 to 7 tons of ore made clean and marketable beyond the 13 tons sampled, and in another ten days, or a fortnight, we can again sample (say) 10 tons. We have on in paying quantities in the deep adit, No. 2 adit, in the back of No. 2 adit, and the mine generally looks very promising. The cross-cut driving north from No. 2 adit generally east has passed through nice mixture of ore and vein-stuff, and now contains a little ore. The stopes back of No. 2 adit are much the same. We find the ore continues north on the side of the No. 2 adit east; the lode, so far as we have gone north, will yield 30 cwt. of lead ore per fathom. We are engaged now, and shall be for some time, in trammeling out stuff from the deep adit, which has accumulated since my last, through want of stuff from the old stopes. Good progress is being made on the dressing-floors.

BEDFORD CONSOLS.—J. Mitchell, Nov. 9: In the middle adit level cross-cut we are driving south towards the engine-lode, and I am pleased to say that the ground is gradually improving, and of a highly mineralised character, and we fully believe the lode will be found productive when intersected. We have opened on the new north tin lode at surface in place for a great many fathoms in length, which has a fine appearance, and from the most eastern part yet opened we have raised about 20 tons of stuff; the lode, so far as seen, is 12 feet wide, with good work throughout, and from the various assays made from the different parts of the lode we find it will yield from 12 lbs. 12 ozs. upwards to 3 cwt. 4 lbs. 7 ozs. of tin to the ton of stuff. We shall raise about 30 tons of stuff in a few days for the stamps, and fully prove the value of the lode. A great many practical men have been here and seen it, and are all highly pleased with the fine appearance of the lode, and all agree as to the importance of the discovery. I have no misgivings whatever about it myself, and fully believe, as far as seen, that it is the greatest discovery made in this district since the opening up of Devon Great Consols Mine.

BEDFORD UNITED.—J. Phillips, Nov. 10: The shaft is being sunk upon the lode, and we are driving by the side of the lode east and west in the 103 fm. level. The lode in the 103 west is of just the same size and value as for some time past. We are driving by the side of the lode in the 103 level east, and in the 75 east. The stopes are yielding the usual quantity of ore.

BLAEN CAELAN.—J. Evans, Nov. 5: The lode in the 10, under a lit, is improving every foot we drive, and its produce is now increased to over 30 cwt. of lead ore per cubic fathom; the lode is wider than the level, had the best ore is left standing on the south side; it is looking well for further improvement, and is composed of a matrix harder than the rich bunch we have in the adit, 10 fms. over, but 5 or 6 fms. in advance of this point. This I consider a good sign that the ore will hold down well.

J. Evans.—Nov. 9: The important discovery reported last Saturday holds on well, and the end of the level gives sign of further improvement. The cross-cut north of adit is in good ground, carrying branches of spar, which leads me to hope that the men will soon cut the north lode. The end of main, or straight, adit is without change; there must be a fine open lode ahead, for the quantity of water bursting through the end is very large indeed. The little steam-engine underground in the adit over the shaft does its work of pumping and drawing with the greatest ease. At our next setting a bargain will be made to sink this shaft to the 20 below adit, and judging from its past work, I think the engine will do the drawing and keep the water in fork at this part of the mine for 30 fms. deeper yet. Our buildings progress satisfactorily; the engine and crusher house walls are being thoroughly well done, as we have excellent stones from the quarry which we have opened in the sides of the main adit; these are embedded in Aberthaw (hydraulic) lime, and I have no doubt, unless the weather sets in very severe to stop the masons, that we shall be able to make large returns of ore from January next, as this discovery in the 10, below the adit, will add greatly to the resources of the mine.

BONFLYDOW.—Thomas Kemp, Nov. 9: Settings for November: No. 3 Shaft—

North Lode: Six men to cross-cut the lode south from the 84 west, at 157 per fathom, stent 2 ft., as I think the high bar of ground extends a little beyond this distance, and is producing about 1½ ton of lead ore per fathom. Six men to sink the winze under the 73 at 250 per fathom. Twelve men to stop the lode to the west of winze under the 62, at 50s. per fathom, the lode is worth 2 tons of lead ore per cubic fathom. Four men to stop the lode to the east of winze, at 40s. per fathom; the lode is worth 30 cwt. of ore per fathom. Six men to stop the lode over the back of the 62, west of winze, at 90s. per fathom; the lode is worth 25 cwt. of lead ore per fathom. A tribute pitch is set in the back of the 52 to two men at 30s. per ton of dressed lead ore.—No. 3 Shaft: South Lode: Two men to continue the cross-cut south through this lode from the 40, west of shaft, at 15s. per fathom; the lode is without change; it is proving to be very wide, and is composed of blue slate, intermixed with carbonate of lime, spotted with mastic and copper.—No. 1 Shaft: South Lode: The bargain set some time back for putting this shaft down to the 36 is nearly completed, but the ground just at the end of the bargain has set in very hard, consequently but slow progress is made.—No. 4 Shaft: The sinking of this is suspended for a while, owing to a larger body of water being in the ground than the men can draw by buckets.

BUDNICK CONSOLS.—John Rawlings, R. Hill, Nov. 10: We have completed the footway at Peter's shaft, and put one man and one boy at the 23 to drive eastward on the course of the lode, which is of a very promising character; the tributaries are raising their usual quantity of tin-stuff. We have purchased some roofing at Perran St. George Mine, to cover our dressing-floors; no time will be lost in covering them over.

CAEGYNNON.—Nov. 9: The men in the engine-shaft have removed the lift and put in beam-steel, &c., and are now going on regularly with the sinking. The ground in the bottom of the shaft is much harder than it was, down nearly 4 fms. below the 50. I do not see any alteration in the 50 cross-cut south, or in basing throughout the mine since my report last week. We have about 40 tons of bleached sand in the ore-holes, and about 10 tons more to dress up. If the weather had been favourable we should have had it all ready for market by this time (50 tons). We have taken out about two tons of lead in dressing the blonde, which will pay for the dressing cost.

CAPE CORNWALL.—R. Pryor, J. Davey, Nov. 8: Saturday last, being our pay and setting, we set the following bargains:—The 100 cross-cut to drive north of the engine-shaft, by four men, at 11s. per fathom. The 100 fm. level to drive east of cross-cut, by four men, at 10s. per fathom, in a lode 15 ft. wide, which will produce some fine stones of tin; and in driving east about 8 or 10 fms. it will unite with several other branches.

CARDIGAN BAY CONSOLS.—C. Williams, Nov. 10: Pensarn: The lode in the 10, west of engine-shaft, is 6 ft. wide, consisting of spar, blonde, prian, and silver-lead ore of rich quality, yielding of the latter fair and profitable work. The old mine is now being drained to the depth of our present workings, which is a very important point with regard to the future working of this part of the property.—Brynnarian Old Adit: The ground in the cross-cut, north from this adit, is composed of stiff clay-slate, intermixed with spar, spots of copper, and lead ores. I am daily looking out for the lode, which must be close up the end.—Brynnarian Adit: The cross-cut south to cut the Brynnarian main lode is progressing favourably; the ground in the end consists of light-blue clay-slate, congenial for lead ore; we shall cut this lode in the course of the month. The north and south lode is yielding excellent ribs of ore. The dressing of the ore is being proceeded with as rapidly as possible, samples of which I have forwarded to the office on Monday last. It is most important that a copy of Capt. Richard's working plan of this mine should be sent to the offices; it, no doubt, would be of great help to me, and there are several shareholders call here and ask for it.

CARN CAMBORNE.—H. Bennett, Nov. 5: The south lode at the 85, in the eastern end, is 5 ft. wide, worth 10s. per fathom for tin, and in the western end 9 ft. wide, worth 15s. per fathom. The same lode, in the 70, is worth 10s. per fathom in the eastern end and in the western end 11s. A winze is sinking below this level, down 9 ft., in which the lode is worth 12s. per fathom. A stope below the 70, on the north lode, is worth 20s. per fathom for copper and tin. A stope in bottom of the 60, east of the winze, is worth 9s. per fathom.—No. 1 stope, west of winze, is yielding 10s. per fathom, and No. 2, 10s.

CEPEN CONSOLS.—C. Mansbridge, T. Evans, Nov. 10: No change to remark this week. Our works progress satisfactorily, and we are raising lead daily.

CHIVERTON.—G. E. Tremayne, J. Borlase, Nov. 10: Borlase's engine-shaft is sunk 4 fathoms below the 60 lode, at present is divided by the elvan; the western part is 1 foot wide, and of a most promising character, producing cubic of tin; the eastern part is 2 foot wide, composed of quartz and lime. The 60 is driven south 8 fathoms; lode 3 feet wide, composed of quartz, soft spar, and a little mastic; this end is a good elvan for the production of lead, and has much improved for driving since our last report. In the 40, east of cross-cut, on the east and west lode, lode about 1 ft. wide, composed of 200-kan and mastic, and letting out water. The 40 west lode is 9 ft. wide, composed of soft spar, and yielding stones of lead and blonde, with promise for an early improvement.

CHIVERTON MOOR.—G. E. Tremayne, W. Bennett, Nov. 5: The 105 fathoms level cross-cut, to drive south of Harris's shaft, by six men, at 57s. per fm., to cut the lode. The 95 to drive west by six men, for the month, at 31s. 5s. per fm.; lode producing saving work for lead. The 95, to drive east of cross-cut, by six men, for the month, at 31s. 5s. per fm.; the lode is worth 7 cwt. of lead per fathom. A stope in the back of the 85 west by six men and one boy, for the month, at 21s. 10s. per fathom; the lode is worth 21 cwt. of lead per fathom. A stope in the back of the 85 west by six men and one boy, for the month, at 21s. 10s. per fathom; the lode is worth 20 cwt. of lead per fathom. A stope in the back of the 85 west by six men, for the month, at 21s. 5s. per fathom; lode worth 15 cwt. of lead per fathom. A stope in the back of the 85 by six men, for the month, at 21s. 5s. per fathom; lode worth 21 cwt. of lead per fathom. A stope in the back of the 85 west by six men, for the month, at 21s. 10s. per fathom; lode worth 15 cwt. of lead per fathom. A stope in the back of the 85 west by six men, for the month, at 21s. 10s. per fathom; lode worth 15 cwt. of lead per fathom. A stope in the back of the 85 west by six men, for the month, at 21s. 10s. per fathom; lode worth 15 cwt. of lead per fathom.

CRENVILLE AND WIRRAL ABRAHAM UNITED.—Wm. Kitto, W. Thomas, Nov. 8: Start Engine-Shaft: The shaft will be finished dividing, casing, and bed-planking to the 100 ft. to-morrow morning; afterwards the men will begin to clear the plate at the different levels, which will take a week from this time to accomplish.—Pelly's Engine-Shaft: The sumpmen have cleared the choke referred to last week, and will to-night drop down a 12-ft. pump. We hope to drain the 200 this week, and to report next week favourably on this point. There is no change in any other of our tutu operations.

CUDDRA.—F. Puckey, H. Harvey, Nov. 9: In driving the 142 cross-cut, north-east of Walker's shaft, we have driven fully 3 fms. north of the south lode, through the killas and branches, containing a little tin, but we have not met with any indications of being through the north part of the lode. In the 130, east of the shaft, we are driving on the lode, which is large and strong, and of a very promising character, and is producing saving work for tin. In cutting out and stopping the lode in the back of the 142, west of No. 2 winze, the lode going westward, is of a very kindly character, and producing saving work for tin and looking promising for improvement. The lode in the back of the same level, east of No. 2 winze, is from 10 to 12 ft. wide, and worth 20s. per fm. In the bottom of the 130, west of shaft, we are still driving and stopping in the south part of the lode and branches, which together are 10 ft. wide, containing rich branches of tin, and worth for that width 40s. per fathom. In the stopes in the back of the 130, west of winze, the lode is 15 ft. wide, and worth from 10s. to 18s. per fathom for that width. All the different points of operation are being forced on with all possible speed with due care to economy.

GARN CARN BREA.—J. Rodda, Nov. 9: The lode in the 90, east of Buckley's shaft, is 5½ feet wide, producing stones of ore, but not enough to value. In this level west the lode is producing saving work, and promising an early improvement. The stopes in the back of this level will yield 1½ ton of ore per fathom.

The lode in the 80 west is worth 2 tons of ore per fathom. In the cross-cut north of the old engine-shaft, under Terrell's pitch, we have cut the north part of No. 1 lode, which is worth 6s. per fathom. The ground in the 60 fm. level cross-cut north is still hard, containing branches of capel and spar, and spotted with copper.

EAST DARREN.—Nov. 8: Taylor's Shaft: In the 116 east the lode is from 5 to 6 ft. wide, yielding 1½ ton of lead ore per fathom, and looks promising for further improvement, as the lode is becoming larger and more productive. In the 104 east the lode is 1½ yard wide, and composed of clay-slate and beds of grit, producing a small quantity of ore, being saving work for dressing of a low quality. In the 92 east the lode is 1½ yard wide, composed of clay-slate, carbonate of lime, and small strings of lead ore, but not of any value. The lode in the 80 west, on the south part of the lode, is 1 yard wide, yielding 15 cwt. of lead ore per fathom. At Skinner's shaft, below the 68, the men are making good progress. All other bargains, including the tribute pitches, are without any change to notice since last reported on. Our drawing and dressing, with other surface work, are progressing satisfactorily.

EAST PLYNLIMMON.—John Paul, Nov. 8: In the deep adit cross-cut north the ground is good for driving through; 11 fms. 4 ft. 2 in., was driven in the last two months, and the total length of the level is now 116 fms. The lode has not been reached, but we expect to intersect it any day. Six men are still driving on as fast as possible; present price 51s. 5s. per fathom. In the adit level, going west from the River Wye, the lode is small and unproductive; driving by four men, at 41s. per fathom, including trammeling out the stuff. The engine-shaft below the adit level is being sunk by nine men, but progress is slow; the lode is large and full of mastic, with occasional spots of lead ore.

EAST WHEAL GRENVILLE.—G. R. Odgers, W. Bennetts, Nov. 9: There is no change to notice in the 120 cross-cut north; the men are making good progress with the driving. The lode in the 95 east is small, but we think from the indications the lode and the granite are presenting that an alteration will shortly take place. The lode in the 85 east is 2½ ft. wide, worth fully 2½ tons of copper ore per fathom, the other part of the lode being tiny work. The lode in the 75 is 10 in. wide, worth 1 to 1½ ton of copper ore per fathom. There is a fine lode in the winze sinking below this level, worth 8 to 8½ tons per fathom for the length, 10 ft. long; this winze is 13 fms. in advance of the 85 fm. level end. The stops and rise above this level are looking much the same. The lode in the winze sinking below the 55 will produce for its length (10 ft.) 6 to 7 tons of copper ore per fathom; this winze has now been sunk 10½ fathoms through ore ground.

EAST WHEAL LOVELL.—R. Quennall, Nov. 9: North Lode: We are now 5½ fms. below the 80, which is the deepest part of the mine. East the lode is worth 250s. per fathom, for 6 ft.; and west (where we are sinking) the lode is worth 100s. per fathom. These points are independent of the rich course of the standing east at and above the 80 fm. level, and which has been so often valued at from 800s. to 1000s. per fathom. The other parts of the mine are just the same. [I decline to reply to other people's reports, but shall report fully at the meeting on Wednesday next, when a dividend of 2s. per share will be declared.]

EXCELSIOR.—G. Rickard, Nov. 9: The ground in the deep adit level cross-cut, driving south, is without change; the men are making good progress with the driving. The lode in the 95 east is small, but we think from the indications the lode and the granite are presenting that an alteration will shortly take place. The lode in the 85 east is 2½ ft. wide, worth fully 2½ tons of copper ore per fathom, the other part of the lode being tiny work. The lode in the 75 is 10 in. wide, worth 1 to 1½ ton of copper ore per fathom. There is a fine lode in the winze sinking below this level, worth 8 to 8½ tons per fathom for the length, 10 ft. long; this winze is 13 fms. in advance of the 85 fm. level end. The stops and rise above this level are looking much the same. The lode in the winze sinking below the 55 will produce for its length (10 ft.) 6 to 7 tons of copper ore per fathom; this winze has now been sunk 10½ fathoms through ore ground.

FLORENCE AND TONKIN.—Wm. Verran, Nov. 10: We are making satisfactory progress at the different levels, and are likely to open up a good mine, both for lead and copper, in the western portion of the sett, while in the eastern part, which embraces the Old Tonkin Mine, there is a certainty of having tin. We shall sample a parcel of copper ore during the current month; meanwhile we are opening out ground which will afterwards be taken away at a profit to the adventurers.

GAWTON COPPER.—G. Rowe, G. Rowe, Jun., Nov. 5: At the 95, in King's engine-shaft, we have fixed penthouse; stays around the sinking lift, with other necessary timber work, preparatory to sinking the engine-shaft below the 95, which we purpose doing with all speed. We have intersected a cross-branch of the 95 east, which is pouring forth a quantity of carbonic acid gas, and has drained the water from the lode in all the former drivages; this we consider a good indication of there being a large porous body standing to the south. The lode in the 82, east of said shaft, is yielding 1 ton or ore per fathom. Nichole's stopes in the back of this level, is worth 4 tons of ore per fathom. Simon's stopes in back of the same level, is worth 5 tons of ore per fathom. The lode in the 70 east is yielding stones of ore. The lode in the winze sinking below this level is improved, and settles into hard blasting ground, similar to Snailbeach. I feel confident that some fathoms ahead or us west, in the 95, we shall expect the junction of three well-known ore-bearing lodes, at which point I shall expect a deposit of ore. The late deluging rains have greatly increased our mine water, but we are in a position which works admirably, up to the requirements.

PLYNLIMMON.—J. Paul, Nov. 10: The new pumping-wheel works well, and the water is being forced rapidly. We have no doubt but that operations at the 12 below the adit are progressing well.

PRINCE OF WALES.—E. Davies, Nov. 10: Pump-Spin: In this level the pipe of ore being driven through is quite 5 fathoms long, and for this distance it is worth 8 tons per fathom. We have commenced sinking 4 fathoms on the east end of this pipe at the point where the water is going down to the 20 fm. level. When this is sunk the given distance we shall begin stowing, and expect the stops to improve, both in quality of ore and length of ground. It is from this pipe that I have principally taken the 20 tons just sold for October. This is our third consecutive monthly sale of silver-lead.

PENHALLE UNITED.—R. Pryor, H. Bennett, J. Pryor, Nov. 9: The mine, on the whole, continues much the same as when last reported, with the exception of the lode in the 80, north of Hall's shaft, which is still improving in its appearance and character. We shall sample on Monday next about one quantity of silver-lead.

PENHALLE WHEAL VOR.—W. H. Martin, Nov. 9: The engine-shaft is sunk to the 146, and the men are engaged sinking below for a fork, which will take the remainder of this week to complete, after which we shall proceed with the cutting of the seat and dividing and easing of the shaft. The ground in the 130 cross-cut north is without alteration. I do not expect any material change in this end until we reach the lode.

PERKINS BEACH.—E. Davies, Nov. 10: Pump-Spin: In this level the pipe of ore being driven through is quite 5 fathoms long, and for this distance it is worth 8 tons per fathom. We have commenced sinking 4 fathoms on the east end of this pipe at the point where the water is going down to the 20 fm. level. When this is sunk the given distance we shall begin stowing, and expect the stops to improve, both in quality of ore and length of ground. It is from this pipe that I have principally taken the 20 tons just sold for October. This is our third consecutive monthly sale of silver-lead.

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PRINCESS OF WALES.—T. Foote, G. Rickard, Nov. 9: Saturday last, our pump and setting day, Harris's engine-shaft was set to sink, by 12 men, below the 50, for 28s. per fathom; steamed the month, the takers were requested to work from one o'clock on Monday morning until ten o'clock on Saturday night, our great object being to force on this point of operation with all speed, believing a deeper level is only required to find good courses of copper ore under such splendid gossan seen in the level above.

QUEEN.—W. Knot, Nov. 9: We are progressing with the work at the engine-shaft as fast as possible; the engineers are also making good progress in the erection of the engine, and the boiler arrived on the mine to-day all right.

AT COOK'S SHAFT.—At Cook's shaft, in the 30 west, the lode in the end is now worth 10s. per fathom; price for driving, 4s. per fathom. In the 30 east the lode in the end is 2 ft. wide, producing good stones of copper ore, and is worth 12s. per fathom; price for driving, 4s. per fathom. The lode in the 30 west of the

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8d.; sulphuric at 3d. 5s. to 3d. 15s.—Magnesia: Epsom salts, 4d. 10s. to 4d. 17s. 6d. for refined.—Oils: Olive steady at former values. Lubricating, spindle, and loom oils particularly enquired for, at from 2s. to 5s per gallon. Pure white Norwegian cod liver oil at 6s. 6d. to 7s. per gallon.—Benzole almost stationary: 3s per cent. 2s. 3d. to 2s. 4d.—Disinfectants: Patent, at 5s. per ton for corporations; carbolic, at 10s.—China Clay: 22s. per ton, P rice. In ordinary demand, at 6d. 4d. per unit. Calcined Spanish, at 4s. R.C.—Lime: Building powder stiff, at 9s. to 9d. 6s. per ton. Super-phosphates, at 4s. 9s. and 4d. 10s. Mineral phosphates, at 6s. to 7s. for 6s. per cent.—Estremadura, 1s. 2d. per unit.—Manganese at 7s. to 8s. for 7s. per cent.—Iron Ore: Hematite brisks, at 16s. to 18s. Oolitic at 6s. 9d. to 7s. 6d. in Staffordshire.

NOTICES OF OUR COAL AND IRON KINGS: THEIR DUSKY REALMS, ETC.

While Special Reporters are in the coal and iron districts taking evidence and reporting upon the Truck and Tommy-Shop System, it may be that the readers of the Journal will feel an interest in an article now and then treating of the men who created the industries of these districts, and of some features presented by the districts themselves. Notwithstanding their forbidding aspect, they are centres of operations interesting to witness, and of processes which every year tend more and more to the advancement of national prosperity, and which day by day are subject to such improvements as experience and science dictate. The progress and expansion, indeed, of mining and manufacturing operations, and the increased claim made upon the mineral wealth with which these districts abound, are highly suggestive of indomitable perseverance and untiring activity. Born and reared in the midst of their perpetual smoke, fire, and noise, and having been early harnessed to assist in bringing from their subterranean storehouses to the light of day these coveted minerals, and next to help to put them into those great red-throated crucibles which run them down into metal, I had many years ago felt, in common with others, a wish for opportunities of making myself acquainted with their origin and their history. When only a little wondering black-faced imp, receiving my two heavy 5s. packets of coppers as wages, and not a little proud, too, to swing one in each hand on my way home, there were tommy-shops as now, although not on so large a scale, or so systematic a plan, and right good things too they were considered, when the head of the family happened to be fonder of drinking and fuddling than of provisioning his family, because the wife and children managed by their means to get good beef and a share of bread and cheese. There were no schools then as now, no railroads to take you out into the country, no museums to see, or books to read; boys and men, too, had to drudge on, and grope their way, like a mill-horse in blinkers, within a wretched circle of miserable mechanical routine duty. There were no Rupert Kettle's, no sympathising friends, to take the worker by the hand, and speak an encouraging word; the intellect—where it did exist—had to beat itself against the bars of its cage till it burst them by force, and achieved its own development and freedom. But, bit by bit, through long years of endurance, at thoughtful intervals of labour, the scales of ignorance by constant rubbing gave way, and views which, from their freshness and novelty, raised a suspicion of their being chimerical began to take possession of the brain; and I think I may clearly define my first aim by saying it was to make myself acquainted with those mysterious minerals by which I was surrounded, and to know something of their relationship with others. Afterwards to understand the processes by which Nature in her great workshop had wrought them into form; thirdly, to hunt up information from tales and traditions current amongst the men, as well as by other means of those great chiefs of labour, who by their tact, talent, and perseverance have given birth to those activities which distinguish these great centres of untiring industry.

It has often appeared to me that if workers in iron and clay, or other natural products, could get an insight of the *arcaneum* of that which is constantly passing through their fingers it would go far to deprive work of its drudgery, and tend much to intellectualise labour. Take, for instance, such iron ores as are in use in the iron-making districts around Birmingham, without including those in 1851 Mr. Blackwell, of Dudley, enlightened the ironmakers upon by showing them the vast stores in reserve in various parts of the kingdom; and confining ourselves to the clay ironstones, native to the Black Country alone, we shall find they have an interest of their own, which it is worth our while to become acquainted with.

I know it would be vain for me to think that I could write on this subject in such a way as may interest the larger portion of those who go blindly grubbing deep beneath the surface after these ores, or of very many either who tend the after processes by which they become transformed into metal, but I know also that there is an increasing percentage of readers in these districts who interest themselves in such matters, and that if I can only treat of them in a way that shall neither appear pedantic nor trifling I shall gain their attention. Moreover, I might possibly succeed in interesting outsiders, and convert a vacant stare into a scrutinising look of future interest.

To make a beginning, let me take Dudley as the starting point, prefacing my remarks with one or two general truths. The reader has seen those grey-looking clods brought up out of one of the deepest, dark gimlet-looking holes, bored at considerable cost to one of the several beds of ironstone, which add so materially to the yearly income of the noble proprietor—Earl Dudley. The nodules containing iron are extracted, and the shale, being exposed to air and rain, soon becomes reduced to a soft sticky kind of mud. Well, the evidence we propose to adduce will go to show that this was its original state.

There is nothing in this world, so far as we know, but what has changed, or is in a similar state of transition; every yard of earth in one of those shafts bears evidence as we descend that it was once the surface, covered with verdure and quaint looking trees, or else with a sea which has long since receded, and which was traversed by inhabitants which have since become extinct. And the deeper we go the higher we ascend in the long sequence of events associated with the ancient geography of the earth. In carrying down some of these shafts forest trees have been met with still standing erect, some with their roots grasping the soil which once nourished them. Here too in these shale beds are ferns, drifted bits of wood, generally hermetically sealed up in ironstone nodules, the seeds of plants, the remains of reptiles and of fish. Nor is there any more difficulty in tracing back the circumstances and agencies which produced or accompanied their interment than there is in tracing back some old English or Roman coin to the period in which it was put in circulation. Take our own Staffordshire river, and that into which it falls on its passage to the sea. Both are slow, sluggish streams, which in times of flood are highly charged with sediment, obtained from the soils over which they and their numerous tributary brooks and brooklets flow. These turbid streams force their way over limey, sandy, and clayey lands, portions of which they carry with them, together with seeds and remains of plants associated therewith, and these altogether finally form accumulations at the mouth of the Humber. To such an extent have these clays and sands accumulated, where the current becomes checked on the sea, that the mouth of the Humber is distinguished by newly-formed tracts of land above the present level of the sea, which are now under crop. Imagine these accumulations to have been going on from the time when wolves prowled among the primitive forests of Saxon or Norman times, when the bittern built its nest on the banks of these streams, and the badger reared its young close by; and supposing that you were to dig deep down you would go through layers of accumulated soil, with fragments of wheat, barley, the bones of the horse, the ox, the cat, and the dog, and skeletons of grayling and pike, till you came to those of the wolf, the badger, the wild cat, and it may be to others which had even then become extinct, and which had already become fossils.

Supposing, also, there was to be a collapse of the surface, as we see the ground now and then shrink in and about Bilston, the sea would flow over the flat country of Yorkshire, and drive back the Trent. Instead of trout, pike, and grayling, dog-fish and sharks would come up, and their remains would be buried above the former inhabitants of the river. Supposing, next, the whole of England beneath the sea, as it has been many times, and will be, probably, again, then that by means of the powerful machinery of the earth, which has the ocean for its boiler, and the internal fires of volcanoes to put it in motion, that the country again in process of time emerged from the waves. The Wolverhampton and Dudley miners of the future in

sinking through the younger accumulations, or such of them as had studied the science of the thing, would be able to read the history of the several formations by the light the remains afforded, not the least significant of which would be those his predecessors had grafted upon the surface, such as the iron districts themselves present. In just the same way our knowledge of the conditions prevailing at any period of the world's history is derived, not only from shales and rocks, but from remains found in such shales and sand-rocks much deeper down, and of much more ancient date. This series of iron-stone shales and coal measure sand-rocks rest, for instance, on a much earlier ocean bed, in which we find no vegetable remains, but myriads of corals, indicating a genial temperature of the water, such as shellfish and trilobites—those many-eyed little creatures dug up at Dudley, one of which is known as the Dudley locust. This sea-bed had been overlaid by another, containing less lime, but more sand, and these ground down and washed together by tropical rains, receiving seeds scattered by hurricanes, which vegetated and died, and mingled with crumbling rocks, formed that virgin soil on which the coal-measure flora afterwards flourished. If any man wants a text from which to preach of a fore-seeing and fore-providing Providence, he may find it in the elaborately-designed processes by which these physical substances, such as lime, iron, and coal, so essential to the material wants of man, were produced and stored up for his use.

* * With this week's Journal a SUPPLEMENTAL SHEET is given, which contains: The Best Fuel for the Navy—Three different Methods of Sinking through Running Sand (J. Cope)—Meeting of the South Staffordshire and East Worcestershire Institute of Mining Engineers—Generating of Gas for Gas-Furnaces (Herr Julius Fröhlich)—Diamond Mining in New South Wales (J. Hunt) South African Gold and Diamond Fields (Sir J. Swinburne)—Foreign Mining and Metallurgy—Foreign Mines Reports—Mining in Nevada—Original Correspondence: Rating of Mines and Collieries; Peat Fuel, and Coal; Coal Transport in the Colonies; On the Maritime Ship Canal; Future of Mining in Spain (H. Sewell); Mining in Cornwall (A. Bennett); Silver Mining in Cornwall; Carn Brea Mines; Wheal Grenville and South Condurrow (J. Watson); Nevada Land and Mining Company (J. A. Robertson), &c.

* * With last week's Journal a SUPPLEMENTAL SHEET was given, which contained—Mr. Warington Smyth on the Occurrence of Gold in South Wales—Progressive Series of Popular Lectures on Geology, No. III.—On Gases, and the Atmospheric Air—Presentation to Mr. Hopton—On the Electro-Deposition of Copper and Brass (W. H. Wallen)—Improved Anemometrical Apparatus (J. J. Hall)—Quarterly Sales of Copper Ore—Ventilation of Mines, Ships, and Buildings, by G. Elliot, M.P. (Illustrated)—Burleigh Rock-Drilling Machinery—"Perpetuum Mobile" (H. Dircks)—Foreign Mining and Metallurgy—Monthly Summary of Mining in Australia—Foreign Mines Reports—Patent Matters—Original Correspondence; Lancashire Iron and Steel Works; Colliery Workings in Durham; Coal-Cutting Machinery; Prevention of Colliery Accidents, No. VII; Education for Miners; Rock-Boring Machinery v. Ventilation; Gold; Nova Scotia Gold Fields; Gwennap Great Adit (R. Symons); New Wheal Kingston; East Wheal Lovell; New Wheal Lovell, and its Management (C. Bawden); Wheal Grenville and South Condurrow (W. C. Vivian); Carn Brea Mine, &c.

THE TIN TRADE.—The advance of 4d. in the tin standards has given the greatest satisfaction. The difference which this will make on the best quality of tin ores is equal to 2d. 10s. or 2d. 12s. 6d. per ton. The previous rates issued were five days subsequent to the last Banca sale, when the standards were 118s, common, up to 121s, superfine. Probably the best tin now produced in West Cornwall is readily saleable at about 81s. per ton. This might refer to Wheal Owles, whilst Botallack and Balleswidden might be, perhaps, valued now at 80s., or even 10s. more. Great Work as high as 83s. In April last year the standard for superfine was at 126s., and subsequent to this, in July, it gradually advanced up as high as 129s. There is an excellent trade doing in tin. The last Board of Trade returns fully substantiate this statement. The total supply of tin on the market shows a diminution of upwards of 800 tons as compared with last month.

EAST LOVELL.—It cannot fail to be highly encouraging to the shareholders to find that, as indicated in last week's official report, a material improvement has taken place at the most important point of operation—the bottom of the mine, where, at a depth of 5½ fms. below the 80, the lode west is valued at 100s. per fathom, and 250s. east. This fully confirms the opinion expressed by the manager some time since, that the lode would prove productive below the "slide" in the 80, as it had done below the 70. As will be seen by the official report, which appears in another column, the points above referred to are independent of the rich course of tin standing east at and above the 80, and which has been so often valued at from 800s. to 1000s. per fathom. The manager adds that the other parts of the mine are unaltered. A dividend of 2d. per share will be declared on Wednesday.

TERRAS TIN MINE.—A full report upon the position and prospects of this undertaking may be obtained of Mr. T. Spargo, Gresham House.

CHAMPION MINE.—There has been another important discovery at this wonderful mine, or rather series of mines. A shaft which has been sunk on what is now known as the No. 8 lode, and which for the whole depth at present attained (10 fms.) has produced good stones of copper, muntic, and lead, has improved, and it is now yielding rocks of copper and muntic weighing from 40 to 60 lbs. each. One of these rocks has been sent to London, and will be exhibited at our office, or at such other place as may be arranged, for the inspection of those who desire to become interested in the property. The agent of the mine says, in his last report—"Such a specimen I never beheld for the depth obtained." He goes on to say—"The ore-bearing part of the lode where this stone was broken, and at the deepest point in the shaft, is about 2 ft. wide, and is all the length of the shaft, and on the hanging-wall there is a branch of lead about 1 in. wide." We understand this is very nearly an east and west lode, and is one of eight nearly parallel lodes already discovered. A cross-cut north from this lode, a very few fathoms in length, would cut a 50-ft. lode higher up the hill. In truth, this really seems a wonderful district, and it is, perhaps, difficult for the mining public to have faith in it at once; however, we wish the first adventurers every success, as it is by their efforts the district is becoming known. This discovery is not the first, nor yet the second, but probably the tenth, and in each case rich copper near the granite has been found, whilst lead in great quantity has been invariably come upon in the clay-slate or elvan. We confidently refer our readers to this venture. They need only read the two reports sent out along with the prospectus to be satisfied. These will be found in our advertising columns.

SOUTH ST. JUST.—It is stated that the unallotted shares in this undertaking are to be equally divided amongst the present holders, which will place to credit of the company between 4000s. and 5000s.

FRONTINO AND BOLIVIA.—The shareholders will learn with regret that Mr. H. L. Phillips, the managing director, has retired from the board of this company, as also Mr. Henry Butter. The former gentleman was elected by the shareholders themselves, as their representative nearly five years ago, and he has worked zealously in extricating the concern from troubles of no common order, and which the shareholders cannot have forgotten. It will be, doubtless, a matter of interest to the shareholders at the next half-yearly meeting—to have some explanation of the causes which have led to the retirement from this company of two of its directors.

COAL MARKET.—The market has been supplied this week with 128 fresh ships. For household coals the demand has been much more active, and prices advanced 6d. per ton. Hartley's are without alteration. Hetton Wallsend, 19s.; Haswell Wallsend, 18s. 6d.; Hartlepool Wallsend, 18s.; Kelso Wallsend, 17s. 6d.; Eden Main, 17s. 3d.; West Hartley, 16s. 6d. Unsold, 8 cargoes; 5 ships at sea

The Mining Market; Prices of Metals, Ores, &c.

METAL MARKET—LONDON, NOV. 11, 1870.

COPPER.	£ s. d.	£ s. d.	IRON.	Per ton.
Best selected	70	0	Bars Welsh, in London	7 5 0
Tough cake and tile	68	0	Ditto, to arrive	7 2 6
Sheathing & sheets..	71	0	Nail rods	7 10 0
Bolts	73	0	Stafford, in London	7 15 0
Bottoms	73	0	Bars " ditto	8 2 6
Old	60	0	Hoops " ditto	8 15 0
Wire	71	0	Bars " at works..	7 15 0
Tubes	0	0	Hoops " ditto	8 2 6
	9 10 0		Sheets, single	8 15 0
	9 10 0		Pig No. 1, in Wales	8 15 0
	9 10 0		Refined metal, ditto	8 15 0
	9 10 0		Bars, common ditto	8 10 0
	9 10 0		Do. mch. Tyne or Tees	8 10 0
	9 10 0		Do. railway, in Wales	8 0 0
	9 10 0		Do. Swed. in London	9 10 0
	9 10 0		To arrive	9 10 0
	9 10 0		Pig No. 1, in Clyde	2 12 0
	9 10 0		Do. f.o.b. Tyne or Tees	2 9 0
	9 10 0		No. 3, 4, f.o.b. do.	2 6 2
	9 10 0		Railway chairs	5 17 0
	9 10 0		" spikes	11 0 0
	9 10 0		Indian Charcoal Pigs,	0 0 0
	9 10 0		in London, p. ton.	6 5 0
	9 10 0		STEEL.	Per ton.
	9 10 0		Swed., in kgs.(rolled)	12 10 0
	9 10 0		(hammered)	13 0 0
	9 10 0		Ditto, in faggots	15 0 0
	9 10 0		English, spring	17 0 0
	9 10 0		At the works, 1s. to 1s. 6d. per box less.	

TIN-PLATES.* Per box.

LEAD.	Per ton.
English Pig, com...	18 0 0
Ditto, LB.	18 0 0
Ditto, WB.	19 10 0
Ditto, sheet	19 0 0
Ditto, rod lead	20 10 0
Ditto, white	28 0 0
Canadaplates, p. ton.	13 10 0
Ditto, at works	13 0 0
Spanish	17 10 0

At the works, 1s. to 1s. 6d. per box less.

REMARKS.—This week has not been productive of any change from that state of inaction which has characterised our market, with comparatively little variation, ever since the outbreak of the war. The home demand, fortunately, has not suffered so greatly, and this has partially preserved the steadiness of our market.

COPPER.—Although the Chili charters lately show reduced supplies, yet it must be borne in mind that the falling off is not commensurate with the diminished demand for France, and, consequently, stocks must increase, and will weigh heavily upon the market.

IRON.—Orders for rails are scarce, and as the ironmasters must now have nearly, if not quite, completed old engagements, there will be more competition, and prices, no doubt, will recede. The season is fast closing for all the North of Europe ports, and the American buyers prefer waiting awhile before executing further orders. There are still enquiries for India, but the requirements at the moment altogether are very limited. Merchant bars are dull of sale. The hoop mills, however, are full of work, and in some instances further contracts have been declined. Plates continue in fair request for bridges and boiler purposes. Swedish bars have dealt in pretty freely, and prices are likely to be maintained, and, perhaps, advanced during the winter. Scotch pigs are a shade lower in price, but are in tolerable good demand.

LEAD.—There is no alteration in quotations. The market keeps steady, but at the same time very quiet.

SPELTER.—Several parcels of foreign have changed hands, at gradually improving rates, and the market closes much firmer than for some time past.

TIN.—The smelters announced an advance of 4d. in the tin standards on Tuesday, and as there is now a much smaller margin than usual between the prices paid by the smelters and charged by them to consumers, confidence in the maintenance of at least present rates is gradually increasing, although the "bears" are still using their utmost efforts to depress prices to suit their own transactions.

IRON TRADE.—(Griffith's Weekly Report.)—We have no favourable change to notice in the iron trade. The market continues inactive, with little business in any department. The ubiquity of the French squadron renders shipments to all German ports hazardous and uncertain, and on this account merchants seem disposed more than ever to withhold specifications intended for Germany. Shipping orders for all foreign markets continue scarce, and buyers and sellers appear to be waiting in the expectation that something will turn up to change the

Nov. 12, 1870.

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LIST OF PLATES.—Frontispiece, Photograph of Dollar Colliery, near Kilmarnock ; 1 and 2, General Diagrams ; 3, Engine Seats of Wood and Stone ; 4, Engine Seats of Iron ; 5, Steam Boilers ; 6, Shaft Fittings ; 7, Cages, Safety Cages, &c. ; 8, Pithead Frames of Wood and Iron ; 9, Pithead Arrangements ; 10, Weighing Machines and Workshops ; 11, Apparatus for Mid-Workings ; 12, Workmen's Houses ; 13, Railway Plans and Sections ; 14, 15, and 16, Systems of Working ; 17, Arrangements for Conveyance at Greenhead Colliery.

London : MINING JOURNAL Office, 26, Fleet-street.

Notices to Correspondents.

* * * Much inconvenience having arisen in consequence of several of the Numbers during the past year being out of print, we recommend that the Journal should be kept on receipt; it then forms an accumulating useful work of reference.

POTTERS' ORE.—Can any of your readers inform me, through your columns, whether round lead ore (termed potters' ore) is still used in pottery? And if so, what companies purchase the same?—G. G. Aberystwyth.

TUOLUMNE GOLD MINING COMPANY.—In the report of the meeting of our shareholders, in last week's Journal, I am made to say that \$900,000 had been taken out of this mine; the words I made use of were \$900,000, &c. I shall feel obliged by your giving insertion to this correction in the next Number of the Journal.—MORGAN BROWNE.

SCALE FOR ADVERTISEMENTS.—Our charge for general advertisements is—for six lines and under, 4s.; per line afterwards, 8d. Average, 12 words per line. SHARE DEALING.—We never interfere in the sale or purchase of shares; neither do we recommend any particular mine for investment or speculation, or broker through whom business should be transacted. The addresses of most of the latter appear in our advertising columns.

**THE MINING JOURNAL,
Railway and Commercial Gazette.**

LONDON, NOVEMBER 12, 1870.

PROPOSED NEW METHOD OF PRODUCING FINISHED IRON.

The Sherman is not the only new process for purifying iron of which we are likely to hear anything in the next few months. We gather that at the meeting on Monday (noticed elsewhere) of the South Midland Institute of Mining, Civil, and Mechanical Engineers, the Hon. Secretary brought to the notice of the members the fact that Mr. GERHARD, a metallurgical chemist, who is one of the members, was desirous of securing co-operation in the testing of a method for manufacturing finished iron. The subject was not, he thought, one that could well be taken up by the Institute; but from what he understood of the process he was willing individually to unite with other members in affording Mr. GERHARD pecuniary help; and he might add that the Past-president would take a similar course.

Mr. GERHARD explained his methods as follows:—Assuming that the pig-iron contained 5 per cent. of carbon, he added 20 or 30 per cent. of raw ore. The 1 per cent. of carbon which was left he had a very simple method of withdrawing, with at the same time the sulphur, and the phosphorus, and the silicon. The expense of doing all this would not be more than from 2s. 6d. to 5s. per ton. These arch enemies of good iron—sulphur, phosphorus, and silicon—most of our readers by this time know are those against which Mr. SHERMAN declares his ability to wage successful warfare. So far as seems to be known of the respective methods, they appear much alike. Mr. SHERMAN's process, however, appears to require the use of the puddling-furnace. Not so that of Mr. GERHARD, who proposes to avoid the necessity for using the puddling-furnace. If Mr. GERHARD can purify pig-iron fit for the mill furnace, or some such re-working apparatus, without resort being had to the clumsy and expensive puddling-furnace, and do it upon a scale sufficiently extensive to make the method commercially valuable, he will have attained a result which men equally competent, we expect, in metallurgy, and certainly of much wider experience in the making of iron, have as yet failed to accomplish. If there is one thing more than another which the proprietor of the mill and forge desires it is that he should no longer be dependent upon the puddler for the work of freeing the pig-iron of the impurities which distinguishes it when it leaves the blast-furnace, and which must be expelled before it can be transmuted into wrought-iron. This he has sought in many ways to accomplish. The foremost men in the South Wales district have laboured at the work ably and long, and with all the assistance that unlimited wealth and mechanical facilities have placed within their reach, yet they have not succeeded. Not daunted by the unsuccess of their competitors in the Southern Principality, certain of the equally competent metallurgists and ironmasters in the Cleveland district are, if we mistake not, now diligently prosecuting the same enquiry.

If, therefore, the method propounded in Wolverhampton be of any worth there will surely be no difficulty on the score of cost in getting for it a fair trial. We know nothing of the method, and very little of the inventor. What, however, we do know of him inclines us, not for his sake alone, to hope that he will be able to test his plan. Some time ago it came within our knowledge that Mr. GERHARD laboured to demonstrate by chemical formula that a scheme for making good steel out of poor pig-iron, which was being experimented upon in the Birmingham district, could not possibly succeed. The capitalist in the affair could not be persuaded that he had not got the means to a great fortune within reach, and so went on with the project. A heavy outlay of money followed, but the issue showed that Mr. GERHARD was right. The thing could not be done, and the whole outlay was a loss. A no better result may, probably, follow upon Mr. GERHARD'S method of purifying pig-iron—with which, as we understand, is also associated a plan for making steel of the product—but it should merit a trial. The inventor is not in the position of Mr. S. C. LISTER, who a fortnight ago transferred to the Bradford Corporation for 40,000*l.* the Manningham Park of 50 acres, and thereby presented the borough with 20,000*l.*

Mr. LISTER, after mastering the difficulties of the combing-machine, experimented incessantly for 20 years, "and was 360,000*l.* out of pocket, before he ever made 1*s.*" in perfecting his patent for the manufacture of silk—a patent which has now turned out one of the most successful of the day. Estimated by his own statement, Mr.

GERHARD, though at one time possessed of money, cannot now raise as many farthings as Mr. LISTER spent pounds. Without in any way croaking, Mr. GERHARD said that his six or seven years' experimenting had made him poor man, unable to command the 30*s.* which he estimated would be sufficient with which to test, upon a limited scale, the method from which he anticipated so important results. The sum appears ridiculously small. It leads to the inference that either Mr. GERHARD has been hiding his light under a bushel, or else that the ironmasters of South Staffordshire have a very poor opinion of the merits of his invention. If the former is the fact, this Journal is happy to have had the opportunity of bringing Mr. GERHARD before the public. If the latter be true, the fact by no means invalidates the plan, for we are not aware that it has been submitted to the crucial test of actual experiment. If it has not we cannot believe that it will much longer remain untried. The inventor may be too sanguine, and his plan, we repeat, may be worthless. We pronounce no opinion. What we write is penned in the interest of the great industry affected. In the hands of the leaders of that industry we now leave alike Mr. GERHARD and his invention.

STEAM COAL FOR THE NAVY.

The question of the comparative merits of Welsh and North Country coal as a steam fuel for the navy has again been raised by the letter of "A Welshman," addressed to the Lords of the Admiralty, and published in the Supplement to this day's Journal. The arguments used are so conclusively in favour of Welsh coal, although the Government reports are alone relied upon, that it certainly seems marvellous that anything but best Welsh should be officially sanctioned, except for supplying any accidental deficiency of fuel at distant stations, where Welsh coal is not obtainable. From a merely commercial point of view the decision of the Lords of the Admiralty is, perhaps, justifiable, for it seems based upon the idea that Government patronage should be equally distributed in all districts, and amongst all classes; but in so important a matter as the supply of fuel to the Royal Navy all other considerations should be unhesitatingly sacrificed, in order to obtain thorough efficiency with the utmost economy. Every legitimate trial is considered by all impartial observers to have added further evidence in support of the view that Welsh coal should alone be used, and notwithstanding the efforts that have been made to justify the "Admiralty half and half" system, it has been demonstrated by attempting to burn the mixture, that the best qualities of each coal are sacrificed, and that in case of any irregularity of the supply the inconvenience is enormous.

In the official trials in the Lucifer it was found that the expenditure of mixed fuel was greater by nearly 14 per cent., whilst the amount of ash was about one-third more. The fires in the trial of the mixed coal became foul after the third hour, and required picking, and the blast being put on. And even with the furnaces altered, so as to burn the mixed coal under the most favourable conditions, the waste is only slightly diminished. It is estimated that if all North Country coal be used instead of Welsh the loss to the country is equal to 5s. 6d. in 1*s.*, and it appears from the above that, even comparing the mixed coal with the Welsh, the former entails a loss upon the country of 2s. 6d. in 1*s.* These are commercial arguments, which must be demolished before the continued use of North Country coal can be justified; and, with regard to the assertion that the Welsh coal more rapidly disintegrates than North Country, it seems that many of the Monmouthshire coals are far less liable to disintegration than the North Country, and that the adverse comparison could only be made in certain cases.

MINERALS, AND FOOD.

There were two articles in last week's *Mining Journal* which, by mere chance, happened to be in near neighbourhood, and which perhaps attracted but little notice, except amongst those interested in mineral oils. One related to a very important improvement in the purification of Canadian oils, which, by the new process of Messrs. Houghton and Howell, will now be brought into the market to compete with American oils. The Canadian oils it is there stated are very defective, and in the attempt to refine them 50 per cent. of refuse is left behind. The other article referred to the enormous development of the shale oil manufactured in Scotland, showing how in that relatively new branch of industry 350,000*l.* a year is already spent in wages. As we have written this in detail, there is no need for us to say much more about these two processes; but now we call attention to something which is not in the *Mining Journal* but in the *Grocer*, a journal with which mineral interests have nothing to do—at least, so we should say. The *Grocer* refers to the scarcity of sardines as an article of food, and we know that even in Paris this resource was soon exhausted. It has been stated that it is on account of the sardines having left the coasts of France and Spain, but it seems this is not the case, the sardines being as abundant as ever, and are as freely caught, but they are pressed into oil and sent to the Liverpool market for manufacturing purposes.

We have now got to bring sardines and petroleum into relation, and this is in the shape of oil. If sardines, or any other article of food, be treated in such a way that they are unfit for human nourishment, but are treated as articles of manufacture, then the supply of food must be lessened, and it is well worth considering whether anything can be done to reduce this waste, particularly as affecting the mining interests, which afford so much employment to labour in the country. Under the emergency of drought, the sheep of Australia were boiled down merely for their tallow, and this tallow, coming into our market, was used up for candles, and in greasing machinery. A happy change in the arrangements has enabled Australian mutton and beef to be introduced into this country, to the great benefit of our working populations, which it is needless to say were not partakers of the tallow. The substitution of meat for tallow was an unmitigated good, for the manufacturers did not suffer, the great increase of shale and petroleum oils supplying candles and machine grease, to make up for the tallow taken from consumption.

It will be seen that the point to which we are calling attention is the substitution of mineral and inorganic substances, incapable of being used as food, for animal and vegetable organic substances, which can be so employed. By proper organisation in this respect very great good must result. First, the general good, in the much wanted supply of food for our population, and particularly animal food at this epoch of cattle plagues; and, secondly, the special good of promoting the utilisation and consumption of our mineral products. Nothing, perhaps, is better calculated to show the many-sided value of scientific labours than what has been realised by the investigation of mineral oils. It is extraordinary to follow out the process, from the theoretical research in the laboratory of the chemist to the period when the raising of long-hidden lumps of shale from below the soil of Scotland is made to compete with the sheep grazing on the neighbouring Cheviots, or on the distant plains of Australia. In the case before us the chemist has not succeeded in creating an organised substance, nor even in simulating one, but he has provided a substitute which discourages the waste and misapplication of what, under proper direction, might become an article of food. Under the competition of shale the day will come when it will be better worth while to export clarified beef and mutton fat, as well as clarified lard, instead of allowing the fat to become an inferior and waste product, and figure as tallow.

We wish, therefore, to call the attention of our scientific and practical readers to that organisation of industry which shall effect the best application of animal and vegetable substances, by the due application of mineral products. In nothing, perhaps, can the benefits of science be better shown than in a review of the methods by which, without extending our territory, the nourishment of our population has within the last 50 years been increased. This has been effected not entirely by mechanical appliances, and by economical expedients, but particularly by the assistance of the mineral kingdom. The adaptation of coprolites and mineral phosphates has been a great benefit. The employment of coal fuel in working machinery has been another. The manufacture of candles, oil, and grease, of which we are now treating, is not the least. The progress of science promises us much more. Candles, illuminating oils (except so far as whale oil was concerned), grease, tar, varnish, and many other substances, were formerly chiefly furnished from other than mineral

sources, and a failure of the whale fishery, or a war with Russia, deprived us of supplies, and ran up the prices of many necessary articles. Now, our own coal and shale mines make us to a great degree independent of foreign supply in case of emergency, and enable us to carry on an export trade, paying for food with the returns.

We, therefore, as we have said, invite the attention of our readers to the subject, because it is only by enlightened co-operation that we can early realise the full benefits. The chemist may do much by pointing out new modes in which such advantages are to be obtained, and the mineral proprietor may devote his capital to carry scientific discoveries into effect, but every manufacturer has it in his power to do something in furthering the general effort, by giving a fair trial and, if justified, preference to those substances which will best promote the national economy. We strongly recommend the subject as one for constant observation and occasional discussion by our mining and engineering institutes, and the more particularly as we are but in the infancy of our investigations, which sedulous attention may enormously develop.

THE AUSTRALIAN GOLD MINES.

We have been favoured by Mr. R. BROOK SMYTH, the Secretary for Mines of Victoria, with the reports of the mining surveyors and registrars for the quarter ending June 30. It appears that 1021*s.* square miles of auriferous ground is actually worked upon; and that 272 distinct quartz reefs have been actually proved to be auriferous. The approximate value of the mining plant employed in their development is 2,144,727*s.*, and the gold miners give employment to 60,367 miners, of whom 28,227 Europeans and 15,478 Chinese are engaged in alluvial mining, and 16,500 Europeans and 62 Chinese in quartz mining. For winding and pumping purposes, in connection with alluvial mining, 399 steam-engines are employed, of 9657-horse power in the aggregate. There are 335 steam puddling-machines, 1660 horse puddling-machines, and 44 buggies. There are 282 whisks, 322 whips, and pulleys, and 18,986 sluices, toms, and sluice-boxes. Hydraulic mining seems to be carried on solely in the Beechworth district, where eleven horses are in use. In addition to the steam-power there are 283 water-wheels; there are also 1042 pumps, and 21 boring-machines. In connection with quartz mining there are 701 steam-engines, used for winding, pumping, crushing, &c., of 13,283-horse power in the aggregate. There are 53 crushing-machines, driven by power other than steam; 6487 stamp-heads; 21 buggies; 22 winding, washing, pumping, and other machines, moved by water-power; 555 whisks; 532 whips and pulleys; and 20-drilling-machines. With these appliances there was obtained 173,208 ozs. 15 dwt. of gold from alluvial diggings, and 135,664 ozs. from quartz mining=308,872*s.* 15 dwt. The quantity of quartz crushed was 223,285 tons 14*s.* 15*d.* in addition to which 36,905 tons 7*cwt.* of quartz tailings, cement, and mullock, and 868 tons 15*cwt.* of pyrites and blanketing, whilst the quantity exported during the quarter was 309,415 ozs. 10*d.*

Appended to the report by Mr. R. A. F. MURRAY, of the Beechworth district registrars, is a very interesting paper on the Durham lead from Sebastopol to Mount Mercer, a district of peculiar interest to the geologist. The portion of the lead under consideration extends from about three miles south-west of Buninyong southward along the Yarrowee Valley to the Mount Mercer plains, bounded on both sides by barren Silurian ranges, extending unbroken to Mount Doran on the east and Smythesdale on the west. The valley itself consists of a series of fertile basaltic flats and undulations, for the most part under cultivation. The present river bed usually traverses the line of contact between the Silurian and the basalt, occasionally crossing and winding through the latter. About 1*s.* mile below the Leigh Grand Junction claims, where the lava of Mount Mercer plains meets and overlies that of the lead, the Yarrowee takes an independent course, and until it reaches the marine miocene strata it channels a deep ravine, cutting through basalt and older plicocene deep into Silurian rocks. The lead passes beneath the basaltic plains to the west of the Yarrowee, and though its trend is unmistakable towards the southern plains its exact position can only be ascertained by boring or sinking.

The descending section is—1. Deposits of clay, sand, earth, and drift, due to influences still in action.—2. Deposits of clay, sand, and gravel (*post plicocene*), due to agencies subsequent to the volcano.—3. Lava basalt, scoria, volcanic ash, and breccia, referable to the recent eruptions of Hardie's Hill and Mount Mercer.—4. Alternate lava flows, and intermediate sedimentary deposits, whose existence has been determined by mining operations on the Durham lead.—5. Auriferous gravel (*lower newer plicocene*) forming the "wash dirt" of the lead.—6. Quartz gravel, cement, &c. (*older plicocene*), forming cappings and intervening between basalt and Silurian—it is more or less auriferous. The Mesozoic or Secondary formation is unrepresented.—7. Sandstones, slates, shales, clay-stones (*lower Silurian—paleozoic*). The entire paper gives evidence of much careful research and observation.

THE FATAL BOILER EXPLOSION AT THE PARIS MINE COPPER WORKS, AMLWCH.

The inquest, which was adjourned for the purpose of calling scientific evidence, was resumed by Mr. Jones, coroner for Anglesey, on Saturday, Oct. 29. From the evidence of the man who had charge of the boiler (and who is by trade a joiner), it appeared the boiler was put down about eight years ago. Some few weeks since a leak was discovered in the bottom of the shell, and which he repaired by putting on a screw-patch. The pressure required was about 23 to 24*lb.* on the day before the boiler exploded the steam-gauge showed a pressure of 44*lb.* He had repeatedly cautioned the stoker not to exceed 20 or 23*lb.* On being asked how often he tried the safety-valve, he said every day, but afterwards admitted that he could not say that he had done so on the day of the explosion, nor the day before.

The report of Mr. Edward Ratcliffe, of the firm of Ratcliffe and Sons, Hawarden, and Mr. Penton, of Bangor, was then put in. The chief features in the report are as follows:—The exploded boiler is of the Cornish type, measuring about 25*ft.* long, by 5*ft.* 2*in.* diameter, having one tube 3*feet* diameter from end to end, and which forms the furnace. The plates have originally been 3*in.* thick, both in shell of boiler and tube, and the end 4*in.* thick. It appears to have been a well-made boiler, but is evidently very old. The boiler gave way in the bottom of the external shell, rending longitudinally for about 8*ft.* and extending half round the boiler.

There was nothing mysterious in the cause of the explosion, for examining the part of the plate which first gave way it was found that it had by external corrosion been reduced to the thickness of an old sixpence; and, in fact, for the whole 8*ft.* along the bottom of the boiler the plates barely measured 3*inches* thick. Three screw-patches, consisting of pieces of plates placed inside the boiler, and bedded in canvas and white lead, and secured to the boiler by one bolt each, appeared to have been leaking, and these, no doubt, wasted the plates. The remaining part of the boiler bottom and the end plates were also very much wasted by external corrosion, and appeared to have been leaking in several places, most of the rivet-joints being completely eaten away. The boiler burst from weakness, consequent upon old age and external corrosion, and, no doubt, aggravated by the patches which had been so very unskillfully put on; and there is every reason to believe that if this boiler had been inspected by any competent person, who would have given a faithful account of its condition, these defects would have been discovered, the boiler discarded, and the explosion prevented.

The coroner, in summing up, strongly condemned the conduct of managers employing such men as joiners to tamper with boiler repairs, and stated that he believed no competent person had been employed to have done these repairs he would have seen the dangerous state of the boiler, and reported its condition, which would, no doubt, have led to its being taken out. The jury, after consulting for a short time, returned a verdict of "Accidental Death."

EXPORTS OF RAILWAY IRON.—The exports of railway iron from the United Kingdom amounted in September to 103,98

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months ending September 30 this year 7,057,730^t, as compared with 8,578,447^t, in the corresponding period of 1869, and 3,554,820^t in the corresponding period of 1868.

THE OLD PARK COMPANY, SHROPSHIRE.—Some little misunderstanding has occurred between this company and the proprietor, Mr. CHENEY (or his agent rather, Mr. SPENSER) respecting the royalty paid by the former to the latter. The company have not been drawing quite so largely on the ores of the property as formerly, and consequently the returns have not been so great, as they have been using hematites and other imported ores. It is thought, too, that a little jealousy exists between Mr. SPENSER, formerly the manager, and the present managers, which may have led to it. We believe, however, that the company are in a position to extricate themselves from the difficulty, and that nothing more than a temporary hitch will be felt, and that this will in no way interfere with the continuance of the works.

REPORT FROM THE NORTH OF ENGLAND.

Middlesborough. Nov. 10.—The return of the Cleveland Ironmasters' Association, for October, gives the make of pig-iron in the district, during last month, as 148,063 tons, being 4531 tons more than was made in September, and 18,580 tons in excess of the manufacture in October last year. Shipments to foreign ports were 11,493 tons in October, against 10,194 tons in September, and those coastwise were 15,864 tons, being a decrease of 4420 tons upon September. It was generally expected that the stocks in makers' hands would stand at reduced figures at the close of October, but in this particular the ironmasters' return is disappointing, an increase of 1415 tons being the actual state on October 31. The total tonnage of pig-iron in the possession of Cleveland makers on the above date was 87,662 tons, against 86,247 tons at the close of the previous month. The stock in the Middlesborough warrant store is 14,139 tons. When it is remembered that the whole of the blast-furnaces have been in full operation during the month, and the general depression of trade caused by the war, the slight increase of 1400 tons is not of much moment, especially when make of 148,000 tons is considered. These latter figures will be still further enlarged at the commencement of next year by the furnaces now in course of erection being "blown-in." There are now "blowing" 110 furnaces, and 6 furnaces out, but available. Messrs. Bolckow, Vaughan, and Co. are building two new furnaces at Eston, and also one at Witton Park; Swan, Coates, and Co., one at Cargo Fleet; Cochran and Co., two at Ormesby; Bell Brothers, at Port Clarence, are re-building two; the Norton Iron Company (Limited) are building one at their works near Stockton; the South Durham Iron Company are re-building one at Darlington; the Consett Iron Company (Limited), are re-building two at Consett; the Wardale Iron and Coal Company are building two new ones at Tidhoe; and Messrs. Gjers, Mills, and Co., and the Lackenby Iron Company, near Middlesborough, are each building two new furnaces. When these furnaces are completed—some of which are being rapidly pushed forward—the pig-iron producing power of the Cleveland district will be considerably increased. The market at Middlesborough yesterday was well attended. Prices are the same as last week. Some sales were effected at the reduced rates, but generally a more lively tone prevailed than has characterised recent market days, notwithstanding the war cloud is rendered much more gloomy by the failure of the armistice negotiations. There is a fair demand for pig metal; shipments are actively going on, and a large consumption is going on in this immediate locality for manufacturing purposes. The nail trade is less brisk, and the cessation of hostilities on the Continent would be particularly welcome news for manufacturers of railway iron, for it is confidently believed that some large orders would soon be given out that are now being held back in order to watch the turn of events. Shipbuilders continue pretty active.

The movement for a Free Library for Middlesborough is progressing very favourably. Another meeting was held on the Exchange yesterday, Mr. Isaac Wilson presiding, when several new names were placed upon the list of committee, and a town meeting is to be held shortly.

TRADE OF THE TYNE AND WEAR.

Nov. 10.—The supply of ships has been deficient this week, and many of the pits have been rather slack in consequence. Freights also continue to advance: to London they are firm at 6s. 6d. per ton; 9s. per keel to Rotterdam, and other ports in proportion. The exports of iron, chemicals, and other goods have been on a large scale, and the imports have also been good. The general trade of the district continues to progress, but the failure of the overtures for peace has certainly for the time considerably damped the spirit of enterprise. However, the production of iron—both pigs, rail, and bar—continues on a great scale, and the demand for chemicals has much improved. Most of the engineers, founders, iron shipbuilders, &c., are well employed, and many of them are extremely busy.

Fans for ventilating purposes continue to be rapidly introduced, both in this and other districts. The success of these fans appears to be remarkable—especially the Guibal—which is rapidly superseding all other modes of ventilation. A very large fan of this kind is now in course of erection at the Uskworth Colliery, having been constructed at Black Hawthorn, and Co.'s, in Gateshead. The diameter of the fan is 45 feet, and if we compare this fan to others which have been started we must arrive at the conclusion that a very large quantity of air will be put into circulation by it. Some experiments on a Guibal ventilator at Lord Lonsdale's Colliery, Whitehaven, conducted by Messrs. Forster, Bunning, Hawthorn, and Shepherd, certainly present the most satisfactory results, and appear conclusive as to the value of the invention.

The various schemes on foot for railway extension show most clearly the rapid advance which the trade of the district is making. The Team Valley line has been in operation some time from Newcastle to Durham, and the extension from the latter place to Ferry Hill is rapidly approaching completion. This is accomplished a large through traffic will be carried by the Team Valley, and, of course, the present main line, via Pelaw, will be proportionately relieved. But the public have lately demanded, and parties have also projected, additional lines of railway in various localities, and the North-Eastern Company, quite alive to their own interests and those of the public, have at once in the most liberal manner decided to make all these additional lines and junctions where necessary. First, they have decided to construct a line on the north side of the River Tyne, which, as has been pointed out in this letter, will prove a very great boon to the merchants and manufacturers of that district. A short line is also to be constructed from Sunderland to Washington on the north side of the Wear, out by far the most important project which is to be carried out without delay is the erection of a bridge over the Wear—that is, a railway bridge—a little to the west of the famous iron bridge erected by the late Mr. Rowland Burdon. This bridge will be the means of forming a communication between the North-Eastern station, at Monkwearmouth, and the Horden station on the south side of the Wear, and thus there will be direct communication with Hartlepool, and in a short time there will be a coast line from the Tyne to Hartlepool and the Tees. That ample and profitable employment will be found for all these lines there is not the slightest doubt. It is expected also shortly that the North-Eastern Company will purchase the Blyth and Tyne Railway, and when this is carried out the communication with Morpeth and Central Northumberland will be greatly improved, and the route may in a short time become of some importance, as pointed out lately in this letter, for the conveyance of minerals.

From Browne's "Export List" we learn the progress made by the Coal Trade, both the coasting trade and overseas trade. The total exports overseas from the north-eastern ports during October were 447,522 tons, against 467,928 tons in October, 1869; and the coal sent coastwise for the same period are 512,440 tons, against 375,964 tons in 1869, the total coal sent by sea being 961,962 tons; and in October, 1869, 788,884 tons were sent, which showed an enormous increase so far as this month is concerned—that is, October, 1870.

NORTHERN INSTITUTE OF MINING AND MECHANICAL ENGINEERS.—At the meeting, on Saturday, there was a good attendance of members and visitors, the chair being occupied by Mr. Edward Boyd, the President. After the transaction of routine business, the paper of Mr. Waller, "On Boilers, and Boiler Explosions," was read, and, as the subject is of great importance, the paper attracted much attention. The paper is most elaborate, and treats of all the different kinds of boilers, and the mode of constructing them. It appears to be a question of some importance whether a boiler should be constructed with the plates placed in a longitudinal manner or in the hoop form, and it is well known that the latter form has been preferred by many builders for some time. The question as to the relative merits of Cornish and ordinary cylinder boilers is also discussed. Lately, improvements have been introduced for the purpose of securing much greater strength in boilers by placing the seams in a diagonal form. Of course, we must refer parties interested in this question to the paper itself; but it may be right to remark here that, whatever form of boiler or mode of construction is adopted, care ought to be taken to load boilers as much as possible below the point of danger. Certainly, a boiler of large diameter ought only to work with a moderate pressure, however well constructed; (say) not much more than 30 lbs. per square inch, while boilers 6 ft. in diameter, and down to 4 ft., may be safely worked at much higher pressures. Several of the boilers for which patents have lately been secured will, doubtless, when tested by length-

ened experience, prove so good and safe as to supersede most of those now in common use. The Cornish boiler, when well constructed, is, no doubt, very good, both as to strength and economy; but there is this objection to it—that it is much more difficult to repair than an ordinary boiler.

THE VENTILATION OF SHIPS, BUILDINGS, AND MINES.—Referring to the invention of Mr. G. Elliot, described in last week's *Mining Journal*, Mr. Crozier, writing to the *Daily Chronicle*, says—"Allow me to state that the plan there proposed is exactly the same as is now, and has been for eighteen months past, in work at these courts, with this addition—that all the air passing into the building is washed by a spray of water, and in very hot weather passes over a tray of rough ice. As to its adoption for the ventilation of vessels, Mr. Brown, two years ago (then my assistant, and now county surveyor for the North Riding of the county of York) proposed to Messrs. Haddey and Sons, of Trowbridge and Manchester, its adoption in steam sailing vessels. A full set of plans of a steam vessel was procured from one of our leading shipbuilders, and the whole system laid out. The plan was not only considered of great importance to the health of the passengers and crew, but more particularly to the stokers and firemen in the engine and boiler-rooms, and especially to all in bad weather, when it was necessary for the hatches to be kept closed for fear of shipping a sea. In case the masts were, as they are in many cases, built of iron and hollow, they were to be used as the extractors for the foul air; and if not so made a jacket of sufficient area was to be formed round the funnel. In both cases the outlets would have been out of the range of the sea.—WILLIAM CROZIER, M.I.C.E., Assize Courts, Durham."

REPORT FROM SCOTLAND.

Nov. 9.—Although we are reducing the stocks in store and in makers' hands somewhat, by an increase in our pig-iron exports—continued now for a series of weeks—these facts exert no potential influence on prices. During these weeks of more than average demand a pervading sameness has characterised quotations, the range of variation at best not exceeding 3d. per ton. This unusual phenomenon is traceable not so much to the belligerent condition of Europe as to the probability of its indefinite prolongation; and if speculators could only arrive at a knowledge of the period of its cessation, the absolute want of iron and coal in France and Germany, and the all but positive certainty of an advance on these articles the moment peace is declared, would give speculators some ground to work on, and communicate a powerful impulse to the pig-iron trade. At the present time there are 131 furnaces in blast, and 423,698 tons of iron in store, which would give speculators room and verge enough for playing their skilful but subtle game at the favourable time. During the last week there was shipped foreign 10,777 tons, and 3573 tons coastwise=14,355 tons, against a total of 8376 tons in the corresponding week last year. This reduces the decrease of the pig-iron shipments for the year to 15,813 tons, which has the appearance of being still further reduced, if not quite extinguished, before the end of the year. The average prices per month, of the ten months past, as compared with those of the previous year, are as under:

Jan. Feb. Mar. April. May. June. July. Aug. Sept. Oct. 1870 .. 56s. 6d. 54s. 7d. 54s. 8d. 57s. 1d. 60s. 8d. 65s. 5d. 51s. 2d. 51s. 1d. 51s. 5d. 1869 .. 55s. 2d. 55s. 8d. 55s. 9d. 56s. 1d. 56s. 2d. 55s. 1d. 55s. 1d. 55s. 1d. 55s. 1d. 55s. 1d.

With the prospect of peace the Pig-Iron market closed rather sensitively on Friday, at 51s. 10d. cash in a few days, and 52s. 1d. a month; but by Monday the hopes of peace were dispelled, and prices receded to 51s. 6d. cash in a week, and 51s. 8d. a month, closing quiet. Yesterday the market was steady, but quotations a shade easier. Today the market is unchanged, but a good business was done at 51s. 5d. cash, 51s. 6d. ten days, and 51s. 9d. and 51s. 8d. a month, closing sellers 51s. 6d. ten days, and 51s. 8d. a month; buyers 51s. 4d. cash, and 51s. 8d. a month. No. 1, g.m.b., 52s.; No. 3, 51s. 6d. —Makers' Iron: Coltness, 61s. 6d.; Gartsherrie, 60s. 6d.; Langloan, 57s. 6d.; Shotts, 57s.; all Eglington brands, 52s. 6d. At Grangemouth we have had an arrival of a cargo of Spanish iron ore, and a portion of a cargo of bars and pigs from Sweden. The trade in Manufactured Iron keeps wonderfully well, and the extensive shipbuilding trade—which has become so securely localised on the Clyde—is causing some of the large makers to add to their heavy machinery, so as to enable them to supply the demand for the larger sizes and thicknesses of plates which the new system of warfare is demanding. Nail-rods, bars, and hollow ware are in request, but owing to the advanced season of the year all kinds of ship iron are easier, being in less demand. Railway chairs are offering, and we have tenders in this market for 1000 tons of cast pipes for the Glasgow Water Commissioners. The Midland Railway Company are also inviting tenders for a supply of locomotive engines for their lines. No change in quotations.

The Coal Trade is firm at the advance noted last week; and the shipments for the week just closed prove that there is a scarcity of the article, both for home and foreign service. For the week ending yesterday 39,892 tons are reported as shipped foreign and coastwise, against 22,439 tons in the same week of 1869, showing an increase of fully 17,000 tons on the week. With the exception of a more than ordinary amount of casualties, some of them of a fatal nature, the miners are showing considerable industry and attention to their work, with wages varying from 4s. 6d. to 5s. a day.

ARBITRATING WITH THE SCOTCH PUDDLERS.—This case, which is being heard before Mr. George Anderson, M.P., is still being continued intermittingly. The men making out their case very much in their own favour, and the employers giving it a reverent aspect. The puddlers brought forward to give evidence seem to be very shrewd men, and they have stood the crucial test of the masters' solicitor very successfully. There is a feeling, however, that the examination has been unnecessarily spun out, and that it might have been settled with less formality and less ado. When the arbiter has given his decision, we will have to consider it in the light of the evidence led, and approve or condemn it accordingly. Till then, we withhold any opinion on the subject.

REPORT FROM DERBYSHIRE AND YORKSHIRE.

Nov. 10.—There is not much that is new to report with regard to the iron works in Derbyshire. Business at most of them is still good, and a large quantity of ironstone is being imported from Northamptonshire for mixture with the local stone, the combination producing a very good quality of iron. The output of pig-iron was probably never larger, if so large, as at present, whilst a still further increase is likely to take place. The collieries in the district are kept fully going, but seeing that during the last month there was a very large increase in the quantity of coal sent to London, 51,617 tons more than for the same period of 1869, the proportion which under ordinary circumstances should have fallen to Derbyshire has not been so large as might have been expected. The great increase has been on the Great Northern, the Midland being second only. The large quantity carried by the Great Northern to some extent is attributable to the reduction of the rate made by the Manchester, Sheffield, and Lincolnshire Company from South Yorkshire to Retford, and the reduction of 2s. per ton made to the coalowners by the former. In London although the revenue has been in operation little more than a fortnight, yet the metropolitan consumers have not been slow in taking advantage of it. Of course, the demand for Derbyshire coal in consequence has rather fallen off, seeing that it is not superior to that of Yorkshire, although the charge for it has been much higher. With a view to coming to an arrangement, and preventing loss to the coalowners and railway companies, a meeting of the representatives of the Midland, Great Northern, and Manchester, Sheffield, and Lincolnshire Railway Companies was held at Derby on the subject. No understanding, however, was come to, and so matters are to go on as they have been; with one exception, however, that the Midland Company are understood to have agreed to reduce the rate from Derbyshire 1d. per ton, the same as the Manchester, Sheffield, and Lincolnshire Company. Should the coalowners on the Midland agree to make a similar reduction, then there will be a fight for the trade to London, the only persons benefiting by it being the consumers. The rate reduced can scarcely pay the companies, whilst the coalowners in many instances will be working at a loss, seeing that 1s. per ton is considered a large profit. In steam coal there is not much change, but the trade has been very well maintained so far.

The heavy branches of the Sheffield trades continue active, and there is no failing off in the demand for heavy armour-plates and warlike material. Indeed, were the war closed immediately there is no doubt but what the requirements of continental Governments would be such as to keep our producers of offensive and defensive armour even busier than they are at present. Makers of rails, springs, buffers, and nearly everything used in connection with our railways continue to be actively employed, and there are some considerable orders in hand for telegraph wire, &c. The dispute with the American authorities with regard to the invoicing of steel goods, and which has considerably affected the trade, is in a fair way of being brought to a close. The agents of the American Government, who have been taking evidence on the subject, have about finished their labours, and it is generally believed that their report will be favourable to our manufacturers.

The Coal Trade in South Yorkshire is more active than it has been, and a much larger tonnage is now being sent to London than for some time past. This is principally due to the joint reduction made by the Manchester and Sheffield Railway Company and the colliery proprietors. But the sacrifice thus made is only of a temporary character, for it could not be continued without entailing serious loss to the parties concerned. It may, however, have the effect of having the rate by the Midland and Great Northern Companies fixed on a more equitable basis than at present, and which would ultimately prove to the advantage of both. In Steam Coal a good business is still being done, and freights by water to Hull have advanced. There is no change with regard to the trade to the North of Europe, but it is not to be expected that the Baltic will be open much longer, whilst to Hamburg the presence of the French blocking fleet is not likely to benefit shippers. Colliers, of course, are really prize-

able to the French squadron, as the coal they carry can be readily transhipped to the war vessels, many of which, no doubt, find some difficulty in obtaining legitimate cargoes, seeing that very little is doing in coal from English ports.

THE ARBITRATION AT LEEDS AS TO COAL-CUTTING MACHINERY.—The referee (Mr. Bond) in the protracted arbitration case in which Mr. Wm. Leatham, of Brookfield Foundry, Hunslet, and Mr. G. E. Donisthorpe, of Harrogate, were the contending parties, has given his award. There were cross actions between Mr. Leatham and Mr. Donisthorpe, arising out of the invention, construction, and improvement of patent coal-cutting machinery. Mr. Leatham had brought the action against Mr. Donisthorpe, and the referee finds that with respect to it Mr. Donisthorpe was in debt to Mr. Leatham £7,579.1s. 8d.; and in the action in which Mr. Donisthorpe was the plaintiff, he finds that Mr. Leatham owed Mr. Donisthorpe £2,282.19s. 3d., leaving a balance of 530. 5s. 5d. due to Mr. Leatham. That amount the referee directs Mr. Donisthorpe to pay to Mr. Leatham. He also directs Mr. Donisthorpe to deliver to Mr. Leatham certain agreements and letters patent; but as to an action of replevin, Mr. Donisthorpe is awarded 3L. 3s. as damages and 1s. 1s. 8d. costs. The claim of Mr. Leatham to a royalty is declared to be unfounded, and no infringement of his patent has been proved. As to the fixtures at Brookfield Foundry claimed by Mr. Leatham, the award makes them his property. The award also directs that Mr. Donisthorpe pays Mr. Leatham all his costs, except the costs of one sitting on Oct. 14. Mr. Donisthorpe is also to pay the costs of the award and of the reference.

REPORT FROM NORTH AND SOUTH STAFFORDSHIRE.

Nov. 10.—The hopes which existed last week of an improvement in trade, which would result from the conclusion of peace, have been rudely dissipated, and already we hear of less orders being given out, and the tone of the meetings of the trade have been quieter. There is a good contract in the market for the Great Eastern Railway Company, who advertise for 6350 tons of railway iron. The depression in the Rail Trade is increasing the competition of the works in the North of England for the production of the special makes on which South Staffordshire mainly depends, and North Staffordshire in a scarcely less degree. The diminished consumption of pig-iron in the making of rails is lowering the price in the districts which send it into Staffordshire, and except the best qualities the tendency is now in favour of the buyer. Cinder and common forge are quoted 2L. 17s. 6d. to 3L. 2s. 6d. All mine, hot blast, 3L. 10s. to 3L. 17s. 6d., but these are in a great measure nominal figures. Prices of finished iron are—for bars, 7L. 5s. to 8L.; hoops, 7L. 17s. 6d. to 8L. 10s.; and sheets, 8L. 10s. to 9L. per ton.

The Hardware Trades of South Staffordshire continue moderately brisk. The foreign demand, except for the parts of the Continent engaged in war, is tolerably good. The Tube Trade at Wednesday is active, and the great works of the Patent Shaft and Axe Tree Company are doing a steady trade. They have just completed a new bridge across the Severn at Stourport, which is 1000 feet long, and has a centre span of 155 feet clear.

The presentation of the Testimonial to Mr. Frederick Smith, the head of Dudley's principal agent, on his retirement from the general management of his lordship's mineral estates, will probably take place on Jan. 3, in the Public Hall, Dudley, on which occasion there will be a dinner. The subscriptions, which are confined, or nearly so, to the agents, workmen, and others connected with Lord Dudley's mining estates, have reached a large sum. Mr. Jeffries, the treasurer, has already received between five and six hundred pounds, which sum will be further increased. The testimonial is to consist of a beautiful silver gilt vase, of Grecian design, accompanied by two Greek and two Assyrian vases, which are being manufactured by Messrs. Elkington and Co., the well-known silversmiths, of Birmingham.

Messrs. Joseph Evans and Son, of the Culwell Foundry, Wolverhampton, have secured the English patent for a new American stove, of which the *Wolverhampton Chronicle*, after trial, says—"Its chief recommendations are efficiency and economy in operation, and having tried one of the stoves we are able to say that they answer exceedingly well. While consuming but little coal they afford almost any required amount of heat, and do not injuriously affect the atmosphere of the room in which they are placed."

THE SANDWELL PARK COLLIER COMPANY (LIMITED).—The first general meeting of shareholders was held on Tuesday, Mr. P. D. Bennett, Chairman of the Board of Directors, presided, and there were present between 40 and 50 shareholders, amongst whom were Mr. R. Farley, Vice-Chairman; Messrs. J. Fellows, W. North, J. Field, E. Maud, W. B. Harrison, I. Checkley, J. Slater, J. Cooksey, and C. Bissell, directors; and Messrs. Lewis, R. Mason, S. and J. Bayley, R. Smith, J. Hamblet, F. B. Oerton, D. Peacock, S. Poulton, and G. B. Nichols. The report stated that it was now nine months since the scheme was first announced, and eight months since the first meeting of intending shareholders. The delay had not been occasioned by the directors, but on the other hand it had been their study to shorten the legal preliminaries as much as possible. However, in a concern involving the leasing of 1700 acres over a term of 60 years, it had been necessary for both lessor and lessee to exercise considerable caution and care. The directors were glad to say that the delay had not been unattended with some benefit to the company, inasmuch as the noble lessor had been prevailed upon to reduce the minimum rent upon the whole from 9s. 0d. to 6s. 0d., in the event of coal being found under the whole estate, and he had also granted a longer period in which the lessees were to exercise the option of electing to work the whole estate or not; and there were other minor alterations in the original terms. The directors, therefore, had reason to congratulate the shareholders on the execution of the lease, which was effected on Aug. 18. Since the signing of the lease the director had commenced preliminary sinkings and borings on the site of the intended permanent shafts. These were completed a fortnight ago, and the result was most gratifying and assuring; not that they gave any additional indications of coal, but that they were most favourable in a constructive point of view. The preliminary works had proved that to a depth of about 40 yards there was no sand whatever, and little or no water, which in a commercial point of view might be considered as a possible saving of time and money, as compared with the pit shafts which had hitherto been sunk in the Permian district of West Bromwich. Encouraged by this favourable result of the trial of the upper strata of the shafts, the directors were now engaged in proceeding by tender responsible sinkers the sinking of a 9 ft. shaft to prove the coal. The erection of suitable pumping and winding machinery, offices, workshops, and other necessary erections was now being let by tender, and would be proceeded with without delay. The directors had further to report that Articles of Association had been prepared with considerable care by the solicitors to the company

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become more serious. The great anxiety evinced by both buyers and makers in regard to the restoration of peace shows plainly that orders will then flow in abundantly from all the principal sources. There is scarcely anything fresh to be noticed in reference to the home demand. A few small orders for rails are given out by the home railway companies, and some of the lighter descriptions of make are in fair request. Makers, however, have considerable difficulty in upholding prices, and will, no doubt, fail to sustain even current rates long if the war continues.

The wages question is again about to come under consideration in this district. The ironmasters have not yet communicated to the ironworkers any intention to reduce the rate of wages, but the necessity for such a course is beginning to be discussed. It must be admitted that the prices obtained for finished iron at present are considerably lower than those of the summer months, and it will be impossible for the masters to continue to pay the same rate of wages if the depression now beginning to be felt prevails during the winter. The prospect, however, is not a pleasant one.

The Bessemer Steel Works, at Ebbw Vale, are completed, and are now in partial operation. The first ingot of steel was successfully put through the new cooling mill in the presence of Mr. Curtis, the Chairman of the board, Mr. Darby, and other gentlemen. The machinery, altogether, is of the most complete and extensive description, and the new engine, in connection with the mill, erected under the supervision of Mr. Windsor Richards, is considered a model piece of mechanism. It is expected that in the course of a short time steel will be turned out in large quantities from the establishment.

The annual report of the Rhymney Iron Company, to be presented at the general meeting, shows that the profits for the year were £4,801. A dividend at the rate of 7 per cent. has been paid, and a balance amounting to £20,303. has been added to the reserve fund, which now stands at £1,721. These figures show that the concern is in a sound and satisfactory state.

There is yet no improvement to be reported in the Tin-Plate Trade. Makers are again complaining of the advanced price of block tin. The works are kept in average employ.

The position of the Steam Coal Trade is, perhaps, scarcely so satisfactory as last week. As then stated, there is an increase in the demand from several of the foreign markets, but the very great falling off in French requirements has more than counterbalanced that increase. Still, taking a fair view of the trade, it must be said that it is in a tolerably satisfactory state. In the Home Coal Trade there is a considerable business doing, and the colliery proprietors are able to keep their pits in better employ than for a long time past.

An important action has been heard in the Court of Common Pleas, which was brought by Tidens and Nordenfeldt, Russian merchants, against the Rhymney Iron Company. The case was tried before Mr. Justice Brett in July last, when a verdict was given for the plaintiffs, with £1,361 damages. A new trial was now moved for, on the ground that the agreement between the parties had been misconstrued. The company had contracted to supply 2,000 tons of Russian rails and fish-plates, which were to be ready, and on board ship, in Cardiff Docks, by September 15, 1869. Attached to the contract were drawings of a Smolensk rail and plate. After the contract had been completed by letter, the plaintiffs, on August 3, sent a new template, requiring Kysen rails, instead of Smolensk. Some considerable time was, therefore, taken up in preparing the new rails necessary, so that the contract could not be completed within the specified time. It was admitted that the plaintiffs had a right to have the rails made according to the template afterwards sent; but the specification was not made a part of the contract, which made any alteration of rail subject to the approval of the manufacturer. There was not time to make the alterations in the rollers, and turn out the 2,000 tons of rails between Aug. 3 and Sept. 15, and, consequently, the contract was not completed before the Baltic season closed. His lordship, in his charge to the jury, held that the old note and the specification were one contract; and if the defendants accepted the alteration, they were entitled to more time. A rule nisi was granted.

The explosion at the Bedwelly pit, Tredegar, was not of so serious a character as reported last week. One man was just singed, but with that exception no person was injured.

The half-yearly meeting of the Newport Dock Company was held last Thursday, when a satisfactory balance-sheet was presented. The quantity of coal shipped in the dock during the half-year reached 237,334 tons, as compared with 182,901 tons in the corresponding half-year of 1869; of iron, 97,975 tons, against 109,314½ tons in 1869; and of timber, 8,522 loads, against 6,990 loads. The gross receipts the last half-year were £6,745.12s. 3d., as compared with £3,165.19s. 2d. in the corresponding half-year, showing an increase of £3,579.13s. 1d.

The arrivals at Swansea include—The Lynmouth, from Port Wolloth, with 333 tons of copper ore, for Richardson and Co.; Havre, from Bilbao, with 45 tons of iron ore, 196 tons of zinc ore, and 38 tons of lead ore, for H. Bath and Son; T. G. V., from St. Malo, with 100 tons of zinc ore, to order; Ann Alice, from Skein, with 150 tons of copper ore, for H. Bath and Son; Jules Felix, from Nantes, with 155 tons of lead ore, for Richardson and Co.; Lava, from Drammen, with 121 tons of zinc ore, for Dillwyn and Co.; Andalouze, from Bilbao, with 130 tons of iron ore, for Holway, Bros.; and several cargoes of pit wood have also arrived.

COLLIERY WORKINGS IN DURHAM.

PEASES' WEST COLLIERIES.

Under this head are comprised the Roddy Moor, North Roddy Moor, Job's Hill, Sunniside, Stanley, Waterhouses, Esh, Wooley, and the Bowden Close Collieries, the property of Messrs. Joseph Pease and Partners, as lessees, and under the management of Mr. T. Douglas. The royalties, amounting to about 9,000 acres, are leased from various landlords. Coal seems to have been worked in this locality at a remote period, where it lay near the surface, but only to a very limited extent. Several abandoned old pits and mines to be seen near Crook and at Elm Park, from which the supply for the thinly populated neighbourhood around was derived, furnish evidence of the rude manner in which coal was worked and conveyed. Three of the collieries named above came into the possession of the Messrs. Pease and Partners about 26 years ago; these were then recent openings, and had not up to that time produced any satisfactory results by the sale of coal. About the year 1848, however, the large demand for coke commenced, which has given the great impulse to the working of these and other collieries that have been opened by this firm from time to time, and has had the effect of transforming these once quiet villages by the introduction of a numerous population.

At most of the Peases' West Collieries fire-damp is absent, and candles are used throughout in the whole mine workings. Excepting three of the pits, powder is not much used in blasting, the larger proportion of whole coal being obtained without its use. The coal is worked nearly altogether on the bord and pillar system: the pillars are now usually made 30 ft by 14 yards; much smaller pillars have been left in former years, as was the practice of mining. Engine power is largely adopted for hauling underground, and the principle is followed up wherever an extension can be applied. The hauling engines are invariably placed in the mines (when the coal is raised by pits), and the steam to supply them, as a rule, is taken from the surface boilers. We should not omit to mention the introduction of the mechanical system of ventilation at these collieries: the machines have worked with great regularity, and afforded a large increase in the circulation of air. The shallowness of the pits in this locality, compared with those near the east coast, make mechanical ventilators peculiarly adapted for the former; we anticipate, however, the principle will gradually be extended and adopted for the deeper mines, to the exclusion of the furnace principle.

The coal raised at these collieries is principally used for coke making. The quantity of coal raised daily is about 3,500 tons. The coke made at Bank Foot, near Crook, Roddy Moor, Stanley, Wooley, Bowden Close, and Waterhouses is burnt in about 1,400 ovens, which produce from 8,000 to 9,000 tons per week. The principal seat of coke making is at Bank Foot, near Crook, where also the firm have very extensive fire-brick works, in which are made, beyond what fire-brick materials are wanted for the ovens above, large quantities for disposal in Cleveland.

RODDY MOOR COLLIERIES.—This colliery has been 30 years in operation. Coal is got from the Five-quarter and Brockwell seams. The Five-quarter "drift" is driven to that seam through the measures: it is 80 yards in length, with a dip of 5 inches per yard. Section of Five-quarter seam—Good coal, 3 ft. 4 in.; inferior coal, not taken up, 6 in.—=3 ft. 10 in. There are two inlets to the mine, one of them a travelling way for men and horses. The ventilator for this mine is a furnace and independent air pit, situated 50 yards from the drift, giving a circulation of 15,000 cubic feet per minute. A horizontal hauling engine hauls both from the drift, and on the inclined bank from the Bank Foot ovens. It has two 16-in. cylinders, 24-ft. stroke, three cog-wheels: these are equal for the "drift" drum, and in ratio of 1 to 2 for the "bank" drum. The drums are put in or out of gear by slide carriages. The engine hauls about 350 tons per day from the drift, 10 tubs at once. The surface railway bank is three-fourths of a mile in length; the engine hauls the empty wagons up this bank, the laden ones run down with the rope: it also raises laden wagons up the bank to a certain point, and drops them back to the ovens. Near to the drift is the Emma pit, 26 fathoms in depth to the Brockwell seam, from which about 400 tons of coal and fire-clay are raised per day from the Five-quarter and Brockwell seams. The Brockwell seam varies from 3 feet 8 inches to 4 feet 6 inches in thickness. There are five inlets to the mine, and one upcast for the Brockwell, situated 1,300 yards north of the coal pit. The heat from one boiler, and the exhaust steam from the

underground engine, placed near the upcast, produce the ventilation, amounting to 30,000 cubic feet per minute. A lever winding-engine, at the Emma pit, has 20-in. cylinder, 4-ft. stroke, direct acting, 6-ft. drums, slightly conical; round wire-ropes, single-tub cages. It pumps at nights, for colliery purposes, by means of a wood counter beam, brought within the house, and connected to one of the levers: the water is raised by a 6-in. forcing lift, 20 fms. in height, and 5 fms. more to the reservoir for the supply of the coke ovens. Three plain cylindrical boilers supply these two engines; they are hand-fired, and covered with Jones's non-conducting composition. An inclined elevator is worked by the winding-engine in two lifts; one tub ascends while the other descends in each lift, and discharges from one to the other at the middle; the upper one again discharges at the top to a coal hopper, or to a nut screen, if required. The horizontal hauling engine, placed near the bottom of the upcast before referred to, has two 15-in. cylinders, 2-ft. stroke, wheels in ratio of 1 to 2. Two 4-ft. drums. One plain high-pressure boiler, 35 by $\frac{1}{2}$ ft. The engine plane is 1,300 yards in length from the Emma pit to the engine, and 600 yards further north, equal to 1,900 yards: 35 tubs are hauled each way by main and tail ropes; these pass over return sheaves at each extremity. An endless chain incline feeds the main plane at the far end; a landing, at 1,400 yards from the shaft, is supplied by a road worked by another endless chain system for 400 yards, 100 yards of which is on a rise of 12 in. per yard, and 300 yards beyond on a gradient nearly level. Another landing, at 800 yards from the shaft, is fed by a self-acting incline. Three horses are employed besides on other branch roads. A beam pumping engine is placed in the valley in connection with this mine; it has a 10-in. cylinder, 24-ft. stroke, wheels in ratio of 1 to 2, and raises water with one 8-in. bucket lift, 3-ft. stroke, 16 fms. in height, one plain boiler connected to it.

NORTH RODDY MOOR.—This colliery has been 24 years in operation. The Lucy pit, which is the coal pit and also the upcast, is 37 fms. in depth to the Brockwell seam; its average thickness is 3 ft. 4 in. The downcast pit is situated 150 yards west of the Lucy pit, used only as an inlet. Ventilation is caused by the exhaust steam from the hauling-engine, placed near the bottom of the Lucy pit. Lever winding engine, 27-in. cylinder, 5-ft. stroke, barrel drum, 10 ft. at sides, 10 ft. 4 in. at middle, fly-wheel between the drums: 300 tons of coal raised per day, with single-tub cages and round wire-ropes, three screens, and vertical elevator to nut screen. One of the levers projects through the wall of the house as a beam, to be connected to the counter beam for pumping, not used now. Four plain boilers, two 35 by $\frac{1}{2}$ ft. two 32 by $\frac{1}{2}$ ft., supply the winding, underground, and shop engines with steam, at 35 lbs. pressure. They are covered with a composition made at the place. The steam is conveyed in pipes down the Lucy pit to the underground hauling engine, placed 70 yards north from the pit bottom; it has two 15-in. horizontal cylinders, 2-ft. stroke, wheels in ratio of 1 to 2, two 5-ft. drums, on separate shafts, with slide carriages: 30 tubs are run in and out on the north and east plane, 1,200 yards in length, partly with tail and main ropes, and partly with main rope only. The south-east dip branch, 900 yards in length, is worked with main rope only.

STANLEY.—This colliery has been 12 years in operation. The coal pit, also the upcast, is 40 fms. in depth to the Brockwell seam; its average thickness is 3 ft. 6 in. Lever winding-engine, 30-in. cylinder, 5-ft. stroke, has two eccentrics and double-beat valves, barrel drums for round wire-ropes, 13 ft. 2 in. at sides and 13 ft. 6 in. at middle, fly-wheel between: 700 tons of coal raised per day, in cages holding two tubs on one deck. This engine pumps at night, when required, to supply the coke ovens reservoir; a counter beam outside is connected to one of the levers. There are two lifts, the lower, in the pit, is a 12-in. bucket lift, 27 fms. in height; the upper, in staple, at the opposite end of the beam, is forcing lift, 10-in. ram, forcing 13 fms., and about 40 ft. higher up to the reservoir. The drift of communication is in a 3-ft. seam of coal. An adit level in the Brockwell seam runs out in the valley some distance from the pit, so that no pumping would be required, further than the requirements of the ovens and boilers. A horizontal hauling-engine is placed underground in line with the plane, on the opposite side of the pit; it has two 20-in. cylinders, 3 $\frac{1}{2}$ -ft. stroke, one pinion and two spur-wheels, in ratio of 1 to 2; three drums, one main and two tail drums; two of the drums are put in and out of gear by a clutch, and one by slide carriages. The main north engine plane, 1,600 yards in length, and four branches from it to the west, are all worked in and out by tail and main ropes. The north-east plane, one mile in length, is worked by a separate tail rope and drum, having a fall towards the shaft. The ventilator for this mine is a Guibal fan, 24 ft. in diameter, $\frac{3}{4}$ ft. wide; provision is made for widening it if required. The driving-engine has an 18-in. vertical cylinder, 20-in. stroke, direct acting. The fan at present exhausts through an air pit, 12 fms. in depth, and a drift of 20 yards connecting it with the coal pit. This necessitates the closing of the top of the coal pit; this is effected by four iron doors, 3-16 in. thick, two of which are lifted by each cage in ascending. The intake has an area of 48 ft. Four plain boilers, 35 by 5 ft., supply the three engines with steam at 35 lbs. pressure; the boilers are hand-fired, enclosed in a shed, and are fed by a 4-in. vertical engine, 8-in. stroke. The small coal made from the screens is taken by a tank locomotive, on a steep gradient, to the coke ovens hopper, in ordinary iron hopper wagons.

[To be concluded in next week's Mining Journal.]

A PROGRESSIVE SERIES OF POPULAR LECTURES ON GEOLOGY.—LECTURE IV.

The only remaining species of stratified rocks worthy of remark is Coal, and a few words on the origin and nature of this well-known substance may not be uninteresting. Geological research and chemical analysis have shown beyond a doubt that coal is formed by the decomposition or fermentation of buried vegetable matter. It would be difficult within the limits of this lecture to point out the various changes which take place in this decomposition; but suffice it to say that a large proportion of the hydrogen in the vegetable matter passes off in the form of marsh gas, or fire-damp, and that the oxygen escapes in the form of carbonic acid gas, or choke-damp, nearly pure carbon being left behind. Under the head of coal are classed a variety of substances, in which carbon is the predominant constituent, but which otherwise vary very considerably in their composition. Perhaps no element is capable of assuming so many different forms as carbon. In the diamond we have it colourless, transparent, and very hard; in graphite, or blacklead, it appears black, opaque, and soft; and in wood, charcoal, and the different varieties of coal, we meet with it under many new conditions. Indeed, the composition of coal varies so much that no accurate definition can be given of it, and its form varies as much as its composition. It will be sufficient apology for not investigating all these varieties, the essential constituents of which are carbon, oxygen, and hydrogen, to say that no less than 70 denominations of coal are imported into London alone. We will, however, say a few words on each of the three main heads under which the different varieties may be grouped. These are lignite or brown coal, ordinary or pit coal, and anthracite. The lignites often show the structure of the plant from which they are derived; they are soft and gaseous, burning with a great deal of flame. Pit coal has a great many varieties, some of which are bituminous, and cake together in burning, a property which makes them very useful for the household grate, since even the dust of such coal may be burnt. Anthracite, or Welsh coal, is not so easily lighted as the others, but when burning gives out an intense heat, sufficient sometimes to melt the bars of the grate in which it is burnt; for this reason it is seldom employed for household purposes, though very much used in large furnaces. The bituminous coals mentioned above are those in which the mineralising process has only proceeded to a certain extent, a considerable proportionate amount of oxygen and hydrogen having been left in their composition. They are so called from the term bitumen, which is not strictly definable, but under which is included a variety of combustible substances, such as asphalt, or mineral pitch, naphtha, petroleum, &c., the constituents of which are found in such coal. The non-bituminous coals are, on the other hand, those from which more of the oxygen and hydrogen has been extracted, a larger proportionate amount of carbon being left behind. Besides the three essential ingredients of coal already mentioned—carbon, oxygen, and hydrogen—other substances enter into

its composition in a greater or less degree, according to its nature and purity. Nitrogen and sulphur always make their appearance, though in very small quantities—about one part in 100 of nitrogen, and about two parts of sulphur; but the earthy matter which forms the ash is not to be overlooked, for in inferior qualities of coal this is a small ingredient, amounting to as much as 35 per cent, in coals the varieties which never find their way to the market, but which are nevertheless occasionally used in certain districts. This earthy matter is a most objectionable ingredient, destroying the comfort and endles trouble to keep the grate at the required degree of polish.

Enough has now been said on the subject of stratified or aqueous rocks, and it is surely an easy step from coal to fire, and, therefore, to unstratified or igneous rocks, albeit their manner of formation and their characteristics differ entirely from those already treated of. We come now to the wide, deep, and interesting subject of volcanoes—how they were formed, and what part they have played in the economy of nature. To the first of these two questions no complete answer has yet been given, but we will endeavour, in as few words as possible, to set forth the two theories which have been suggested to meet the difficulty. In the first place, there is no doubt from the results which we see, that heat is at the bottom of volcanic action; the difficulty is to arrive at the true cause of the production or existence of this heat. The first of these two theories, which we shall denote as the chemical theory, assumes the existence of some process of which heat is the result; while the second, or mechanical theory, assumes the existence of heat itself as the prime mover of the phenomena observed. Under the chemical theory coal, petroleum, and sulphur have all, at one time or another, been assumed as the chief agent in the process of combustion whereby the heat has been produced. The first of these theories was established by Lemery about the year 1700, when he constructed the volcano which bears his name. His process was to mix a large quantity of clean iron filings with about two-thirds of their weight of powdered sulphur, working the mixture into a firm paste by the addition of water. He then placed the mixture in a cloth, and buried it in the earth, the result being that within a few hours the ground near it was perceptibly raised up, and sulphurous vapours, accompanied with occasional flames, issued through the cracks and fissures. This experiment is now known as Lemery's Volcano, and the cause of the effect in this instance is clear enough—part of the iron rusts, and in so doing evolves heat, which provokes the energetic combination of the remainder with the sulphur, the natural consequence of which is the rapid development of steam or vapour, which must sooner or later find a vent, and force its way out through the earth. Another theory was propounded by Breislac, in which he supposes that volcanoes may arise from masses of petroleum collected in underground caverns, and set on fire by some third substance. These theories, however plausible at first sight, will not bear more careful scrutiny—for on the supposition of such combustions as those above mentioned we should expect to find the products of the combustion associated with those of volcanic action, whereas, in reality, not only are these products absent, but we find others which could not in such a case be expected. Without entering into further detail, we have said sufficient to point out the difficulties which lie in the way of accepting the chemical theory; and, indeed, it can only be received on the further supposition that the materials which occasion the combustion in the depths of the earth are of a different description from the combustibles which exist at or near the earth's surface, and which come within the scope of our observation. There is nothing impossible, of course, in this second assumption, and comparatively recent discoveries are in favour of it, but as yet it can only at the most be considered probable.

Little or nothing more can be said in favour of the mechanical theory which assumes the existence of heat as the prime mover of all the other phenomena. The chief argument in favour of this theory is the form of our globe, which has been proved to be that of an oblate spheroid, or ball flattened at the poles, or extremities of a diameter. For it is contended that it could not have assumed this form unless it had originally been fluid, whence the supporters of this theory infer that the kernel of our earth is still in a fluid condition. Sir J. F. Herschel has, however, shown that our globe may have obtained this form simply from long-continued rotation. But even allowing that the earth was originally fluid, there is no proof that it has continued so up to the present time. It is true that the deeper we penetrate the warmer it becomes, but the greatest depth which has been reached by man is so small, when compared with the radius of the earth, that it only proves that the temperature of the crust is higher than that of the surface. In short, to quote from Dr. Daubeny (to whose valuable work on volcanoes we are indebted for much of the information which has here been condensed)—"As well might a Lilliputian, who, with his utmost efforts, had only bored into the white of the orange which he had extracted from Gulliver's pocket, conclude that this same tough material pervaded the entire mass, in ignorance of the pulp which it enveloped, as the philosopher who finds warm water at the bottom of his deepest well or mine pronounces that the temperature goes on progressively to increase from thence to the centre." We have entered more deeply into this question of the cause of volcanic action than some of our readers might have anticipated rather with a view of pointing out some of the difficulties attendant on geological research than to arrive at any definite conclusion with regard to this cause. It would appear from a careful consideration of the subject (for which we refer our readers to Dr. Daubeny's work) that preference is given to the chemical theory, though, doubtless, the champions of the mechanical theory would find arguments to support their views; but under neither theory has any positive result as yet been arrived at. Be the cause, however, what it may, one thing is certain—that through the agency of heat vast quantities of highly elastic aqueous vapour are developed, which force their way out, violently tearing open the ground in so doing. From this point we are able to speak of positive facts, ascertained by repeated and careful observation, which will render the subject not less interesting, and, perhaps, more instructive. By the first explosion of the vapour a crater, or chimney as it were, is formed in the earth, and fragments of the rocks, though which the vapour has passed its way, are carried into the air, and fall round the vent. This operation is probably repeated several times, until a conical hill is formed, with a central discharge pipe or crater. After this we find that masses of intensely heated liquid rock rise in the central pipe, being forced up by the expansion of the elastic vapour beneath. This liquid rock, or lava, flows in streams over the lip of the crater, or through fissures rent in the sides of the cone, cooling and hardening as it leaves the vent.

Then follows a fresh ejection of rock fragments, known as volcanic ash, or tufa, and thus a conical mountain is formed, the sides of which consist of alternate layers of ash and lava, all dipping outwards from the axis of the cone. These eruptions continue at intervals till the crater becomes plugged up with solidified lava; then the elastic vapour collects beneath, and the result is a fresh explosion, often tearing open another crater, and commencing the formation of another cone. Thus, in the course of years a volcanic mountain of any size, and of the most complicated structure, may be piled up, for besides this regular formation craters of elevation (or soap bubbles, as they are called) are often blown up by the elastic vapour, assuming all sorts of forms, more or less conical, but consisting always of alternate layers of ashes and lava. New eruptions often scatter the old cone; this was the case in the great eruption of Vesuvius, A.D. 79, when Pompeii and Herculaneum were destroyed. The walls of the old crater are still seen on Monte Somma, but the present eruptions take place from a new cone. It may be well to notice here that Pompeii and Herculaneum were buried in the ashes, and not by the lava, and so fine and soft were the ashes that impressions of the most delicate structures are retained in them. Had these cities been buried in lava the intense heat of the liquid rock would have entirely destroyed the carvings and other structures, beautiful impressions of which may be seen at the present day. On the formation of a new cone volcanic action from the old one generally ceases, and then the loose materials of which it was formed are liable to be swept away by the various denuding agencies spoken of in the second lecture; hence we must not expect to find volcanic cones of any great antiquity. It sometimes happens, however, that when the cone has dis-

appeared the plug of lava that consolidated in the crater is still left untouched. Perhaps the best known example of this is the Castle Rock of Edinburgh, which is undoubtedly the plug of an old volcano. We have yet to notice submarine eruptions, and how they differ from those on land. The violence of such explosions is comparatively small, owing to the weight of water above. For the same reason the beds of lava under water will be wider and more level than those above, because the heat cannot evaporate, and therefore the lava will not cool so rapidly; and it is protected from the water by the crust which forms over its surface, hence it keeps fluid beneath, and flows much further under water than in air. When such eruptions take place beneath the sea the beds of lava would often be interstratified with the aqueous rocks which were being formed at the same time. Our attention in this lecture has been occupied almost exclusively with the volcano itself. We shall hope in the next to point out the different forms of lava, and to draw a comparison between the lavas of the present day and the igneous or crystalline rocks which have been formed in bygone ages.

AUSTRALIAN UNITED GOLD MINING COMPANY (LIMITED).
Notice is hereby given that an EXTRAORDINARY GENERAL MEETING of the shareholders in the Australian United Gold Mining Company (Limited) will be HELD at the offices of the company, No. 8, Austinfriars, London, on FRIDAY, the 18th day of November instant, at One o'clock P.M. precisely, for the purpose of confirming or otherwise the following special resolutions, passed at the Extraordinary General Meeting held on the 2d day of November last:—That the directors be authorized to increase the capital of the company by £100,000, by the issue of not exceeding 30,000 new shares, of £2 10s. each. That each new share be issued at £2 per share discount, £2 10s. to be considered paid. That £1 per share be paid down, and the remainder in two instalments of £1 10s. each, on the 4th January and 4th March, 1871. That the holders of the preference shares have the option of exchanging the same for new shares, now to be issued.

J. H. MURCHISON, London Manager and Secretary,
8, Austinfriars, London, November 5, 1870.

THE WORTHING MINING COMPANY (LIMITED).
Notice is hereby given, that an EXTRAORDINARY GENERAL MEETING of the shareholders of this company will be HELD at 63, Bishopsgate-street Within, in the City of London, on TUESDAY, the 15th day of November, at Two o'clock precisely, and that the following resolutions will be submitted for the consideration and approval of the shareholders at such meeting:—

1.—That the company be wound-up voluntarily, under the provisions of the Companies Act, 1862.
2.—That Cyrus Legg, Chairman of the company, and Henry Rendall Wotton, M.D., Deputy-Chairman, be appointed liquidators for the purpose of such winding-up, and the said liquidators be, and they are hereby, authorised to deal with the property of the company by sale or otherwise, in such manner as they may deem expedient.

By order of the Board,
W. J. LAVINGTON, Secretary.

Dated this 31st day of October, 1870.

GENERAL MINING COMPANY FOR IRELAND (LIMITED).
Notice is hereby given, that the HALF-YEARLY GENERAL MEETING of the shareholders of this company will be HELD at their offices, on MONDAY, the 5th day of December next, at the hour of One o'clock P.M., to receive the accounts for the half-year ending 2d October, 1870, and to transact the general business of the company.

And said Meeting will be made a SPECIAL GENERAL MEETING, for the purpose of submitting for the approval of the shareholders, or otherwise, a certain agreement, bearing date the 31st day of October, 1870, and made between the General Mining Company for Ireland (Limited) of the one part, and the Silver-Silver-Lead Mining Company (Limited) of the other part, making certain modifications and alterations in the agreement, bearing date the 4th day of July, 1870; and amongst other provisions, agreeing to accept, in part payment of the purchase money of East Shallee and Gurnthadyne Mines, of 3900 fully paid-up shares in the Shallee Silver-Lead Mining Company (Limited), in addition to the 7500 shares already agreed to be accepted by said General Mining Company for Ireland (Limited), in part payment of said purchase money.

By Order,
THOMAS BAKER, Secretary,
Offices, 29, Westmoreland-street, Dublin, 9th November, 1870.

CREAT WEST CHIVERTON MINE COMPANY (LIMITED).
Notice is hereby given, that an EXTRAORDINARY GENERAL MEETING of the shareholders in the Great West Chiverton Mine Company (Limited) will be HELD at the company's office, 9, Dowgate-hill, in the City of London, on THURSDAY, the 24th of November instant, at Twelve o'clock at noon precisely, to take into consideration the following proposals, and to pass resolutions thereon:—

To alter the Fourth and Fifth Clauses of the Articles of Association by substituting the word "two" for the word "ten," in the last line of the former, and the seventh line of the latter.

To reduce the qualification for the office of director from 100 shares to 10 shares.

To alter the Fourteenth Clause of the Articles of Association, by substituting the third and fourth lines thereof "once" in the *Mining Journal*, and once in the *Times* newspapers, "for" twice in four London newspapers."

To alter the Articles of Association by omitting the whole of the Seventeenth and Eighteenth Clauses therefrom.

To insert in the Articles of Association a clause enabling the directors to borrow money on security of the company's property.

To alter the Forty-ninth Clause of the Articles of Association, by empowering the directors to appoint any person, whether one of their own body or not, manager of the company.

And Notice is hereby further given, that a GENERAL MEETING of the shareholders of the said company will be held at the same place, immediately after the said Extraordinary Meeting, for general purposes.

By order of the Board,
JOHN BROADBENT, Jun., Secretary.

Dowgate-hill, London, November 10, 1870.

SECONDHAND MINING MACHINERY FOR SALE, IN FIRST-RATE CONDITION.

PUMPING ENGINES, of various sizes,—viz., 70 in., 60 in., 50 in., 40 in., 30 in.

WINDING ENGINES, STAMPING ENGINES, STEAM CAPSTANS, and CUSHERS of various sizes.

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ST. AGNES (CORNWALL) MINING DISTRICT 1 1 0

The maps are well mounted, and will be forwarded on receipt of remittance, addressed to the MINING JOURNAL Office, 26, Fleet-street, London.

THE IRON AND COAL TRADES' REVIEW:

ROYAL EXCHANGE, MIDDLESBOROUGH.

The IRON AND COAL TRADES' REVIEW is extensively circulated amongst the Producers, Manufacturers, and Consumers, Coalowners, &c., in all the iron and coal districts. It is, therefore, one of the leading organs for advertising every description of Iron Manufactures, Machinery, New Inventions, and all matters relating to the Iron, Coal, Hardware, Engineering, and Metal Trades in general.

Office of the Review:—Middleborough-on-Tees (Royal Exchange); London

11 and 12, Bedlam-court, Fleet-street; Newcastle-on-Tyne (50, Grey-street).

In the Court of the Vice-Warden of the Stannaries.
Stannaries of Cornwall.

IN the MATTER of the COMPANIES ACT, 1862, and of the WENDRON CONSOLS MINING COMPANY.—By the direction of His Honor the Vice-Warden, Notice is hereby given that on Tuesday, the 22d day of November instant, at the Registrar's Office, at Truro, in the county of Cornwall, at Eleven o'clock in the forenoon, this Court will proceed to MAKE A CALL OF FOURTEEN POUNDS AND FIVE SHILLINGS PER SHARE on all the contributories of the said company, settled on the List of Contributories under Class A.

All persons interested therein are entitled to attend at the time and place aforesaid, to offer objections to such call.

FREDERICK MARSHALL, Registrar.

Dated this 9th day of November, 1870.

In the Court of the Vice-Warden of the Stannaries.
Stannaries of Cornwall.

IN the MATTER of the COMPANIES ACT, 1862, and of the PENGENNA MINING COMPANY.—By the direction of His Honor the Vice-Warden, Notice is hereby given that on Tuesday, the 22d day of November instant, at the Registrar's Office, at Truro, in the county of Cornwall, at One o'clock in the afternoon, this Court will proceed to MAKE A CALL OF FOUR SHILLINGS PER SHARE on all the contributories of the said company, settled on the List of Contributories under Class A.

All persons interested therein are entitled to attend at the time and place aforesaid, to offer objections to such call.

FREDERICK MARSHALL, Registrar.

Dated this 9th day of November, 1870.

In the Court of the Vice-Warden of the Stannaries.
Stannaries of Cornwall.

IN the MATTER of the COMPANIES ACT, 1862, and of the WHEAL ROSE MINING COMPANY.—By the direction of His Honor the Vice-Warden, Notice is hereby given that on Tuesday, the 22d day of November instant, at the Registrar's Office, at Truro, in the county of Cornwall, at One o'clock in the afternoon, this Court will proceed to MAKE A CALL OF FOUR SHILLINGS PER SHARE on all the contributories of the said company, settled on the List of Contributories under Class A.

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TEAM DONKEY PUMPING ENGINES, from 2 in. up to 12 in., rams properly
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Independent of the several valuable tin lodes traversing the sett, from which large and profitable results are anticipated, there is an extraordinary productive tin-bearing elvan course running through the property for a mile in length, and is from 30 to 50 feet wide. The whole of the stuff as broken down (which can be worked as an open quarry from 4 to 25 feet deep), will be trammed away to the stamping-mills; one is completed with 49 heads attached; other mills are in course of erection. The tin-producing stuff is inexhaustible, and proved by undoubted authority that the average yield is over 2 cwt.s. of black tin to 10 tons of stuff. It surpasses anything of the kind ever discovered in this part of Cornwall. This alone, without making any calculation upon the large returns of tin to be extracted from the regular lodes referred to above, would leave a profit on the working of at least 50 per cent. They have already sold a parcel of tin, 7 tons, at £70 per ton, and another parcel will be sold to day, and are preparing another large parcel, which will shortly be in the market; and will be followed by monthly sales, with every prospect of early dividends. This is the best proof and guarantee we can offer of the value of the property. Those investors who are fortunate enough to secure an interest at the present low price of £1 10s. per share (of which a limited number only can be had) cannot fail to make a large profit. It is firmly believed that these shares will go to as many pounds as they are now selling for shillings.

The stamping mill is in full operation, and working beautifully. The others, with 152 additional heads, are in course of construction. These, when complete, will stamp out 200 tons of stuff daily. The yield of tin is more than represented in the Circular. See the agent's report.

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£1 10s.	John Abbott and Co. [L.]	£ 75 0 0 .. 20	15 dls.
50	Blaenavon Iron and Steel Co. [L.]	7 10 0 ..	
100	Bolcock, Vaughan, and Co. [L.]	30 0 0 .. 23	34 pm.
100	Brown, John, and Co. [L.]	70 0 0 .. 4	2 dls.
100	Consett Iron Co. [L.]	7 10 0 .. 4	4 1/2 pm.
100	Cammell and Co. [L.]	80 0 0 .. 15	15 dls.
22	Ebbw Vale Co. [L.]	27 10 0 .. 8/4	8 dls.
20	General Mining Association [L.]	20 0 0 .. 3	5
15	Hopkins, Glikes, and Co. [L.]	10 0 0 .. 1	3 1/2 dls.
10	Ironmasters' Company [L.]	10 0 0 .. 2	
10	Midland Iron Co. [L.]	5 0 0 .. 22	23 1/2 pm.
2%	Mercy Steel and Iron Co. [L.]	11 10 0 .. 8 1/2	7 1/2 dls.
4	Myndy Iron Ore Co. [L.]	3 10 0 .. 2	2 1/2 dls.
1	Nerudda Coal and Iron	6 0 0 .. 7	par. 1/2 pm.
25	Palmer's Shipton and Iron Co. [L.]	25 0 0 .. 1	1 1/2 dls. x. d.
25	Ditto ditto	35 0 0 .. 1	1 1/2 dls. x. d.
10	Parkgate Iron Co. [L.]	65 0 0 .. 10	8 dls.
20	Patent Shaft and Axletree Co. [L.]	10 0 0 .. 5/4	pm.
50	Rhymney Iron Co. [L.]	60 0 0 .. 21	19 dls.
15	Ditto New	15 0 0 .. 6 1/2	5 1/2 dls.
50	Shotts Iron Co.	80 0 0 .. 18	17 dls.
100	Sherbridge Iron and Coal Co. [L.]	25 0 0 .. 16	13 dls. x. d.
100	Staveley Iron and Coal Co.	60 0 0 .. 59	43 pm.
100	Ditto ditto New	10 0 0 .. 7	9 pm.
100	Thames Iron Company	100 0 0 .. 10	8 dls.
7 1/2	Titanic Iron and Steel	5 0 0 ..	
100	Vancouver Coal [L.]	6 0 0 .. par. 1	pm.
10	Van Iron Ore [L.]	10 0 0 ..	
100	Wigan Coal and Iron Co.	100 0 0 .. 10	8 dls.
75	Ditto ditto	75 0 0 .. 10	8 dls.

THE MINING SHARE LIST

BRITISH DIVIDEND MINES.		Paid.	Last Pr.	Business.	Total divs.	Per share.	Last paid.
<i>Shares.</i> <i>Mines.</i>							
1500 Alderley Edge, c, Cheshire*	10 0 0 ..	..		.. 10 6 8 .. 0 5 0	Jan. 1869		
6000 Boscastle, t, c, St. Just	1 0 0 ..	..		.. 0 2 0 .. 0 2 0	Apr. 1870		
200 Brontailack, t, c, St. Just	91 5 0 .. 220	210 215		.. 580 5 0 .. 5 0 0	Aug. 1870		
4000 Brookwood, t, Cardigan*	3 10 0 ..	2 1/4	2 1/4	.. 2 10 0 .. 0 1 0	Oct. 1870		
5004 Bwlch Consols, s-l, Cardigan*	1 0 0 ..	3 ..	2 3	.. 0 9 0 .. 0 2 0	May 1870		
6400 Cashwell, t, Cumberland*	3 10 0 ..	..		.. 0 12 6 .. 0 3 6	Sept. 1870		
916 Cargoll, s-l, Newlyn*	15 5 7 ..	2 1/4	1 1/4	.. 15 15 0 .. 0 10 0	Aug. 1869		
1280 Chanticleer, t, Flint	0 7 8 ..			.. 0 1 0 .. 0 6 0	Nov. 1868		
245 Cook's Kitchen, c, Illogan*	19 14 9 ..	19 1/2	19 20	.. 4 13 0 .. 0 10 0	Oct. 1870		
867 Cwm Erin, t, Cardiganshire*	20 0 0 ..	..		.. 32 8 0 .. 5 0 0	Oct. 1870		
128 Cwmystwyth, t, Cardiganshire	60 0 0 ..	..		.. 387 10 0 .. 2 0 0	July 1869		
280 Derwent Mines, t, Durham	300 0 0 ..	..		.. 177 0 0 .. 2 10 0	July 1868		
284 Devon Gt. Consols, c, Tavistock	1 0 0 .. 100	100 110		.. 114 5 0 .. 0 4 0	May 1870		
656 Ding Dong, t, Gwylfa	49 14 8 ..	20 ..	18 20	.. 7 10 0 .. 0 15 0	Aug. 1870		
142 Dolcoath, t, c, Camborne	32 4 8 ..	130 ..	127 1/2	.. 248 2 6 .. 3 0	Oct. 1870		
12800 Drake Walls, t, Calstock	2 10 0 ..	1 1/2	1 1/2	.. 1 3 3 .. 0 1 0	July 1870		
614 East Cadron, t, St. Cleer	2 14 8 ..	5 ..	4 3/4	.. 14 11 6 .. 0 2 0	July 1867		
300 East Darren, t, Cardiganshire	32 0 0 ..	..		.. 188 10 0 .. 2 0 0	Sept. 1870		
6400 East Pool, t, C. Pool, Illogan	0 9 9 ..	9 ..	10 10 1/2	.. 10 12 3 .. 0 4 0	Sept. 1870		
1908 East Wheal Lovell, t, Wendron	3 9 0 ..	26 ..	27 28	.. 12 16 0 .. 2 0 0	July 1870		
2800 Foxdale, t, Isle of Man*	25 0 0 ..	..		.. 76 15 0 .. 1 0 0	Oct. 1870		
5000 Frank Mills, t, Christow	3 18 6 ..	..	1 1/4	.. 8 4 0 .. 0 2 6	Aug. 1870		
5600 Gawton, c, Tavistock	3 10 6 ..	..		.. 0 3 0 .. 0 3 0	Jan. 1868		
15000 Great Laxey, t, Isle of Man*	4 0 0 ..	18 ..	18 18 1/2	.. 13 1 0 .. 0 8 0	Sept. 1870		
3000 Great Northern Manganese*	5 0 0 ..	..		.. 5 p.t. Feb. 1869			
5000 Great Wheel Vor, t, Mold*	40 0 0 ..	6 1/2	5 5/4	.. 15 12 0 .. 0 3 6	June 1870		
1024 Gunnislake (Clitters), t, c	4 19 0 ..	..		.. 0 2 0 .. 0 1 0	Nov. 1869		
2000 Herodsfoot, t, near Liskeard	10 0 0 ..	46 ..	42 1/4	.. 54 0 0 .. 1 10 0	Oct. 1870		
2000 Holmbush, t, Kelly Bray, c*	1 0 0 ..	..		.. 0 3 0 .. 0 1 0	Nov. 1869		
10000 Killaloe, s-l, Tipperary	1 0 0						